PLAN ESTRATÉGICO DEL PROYECTO INTEGRAL DEL CONCEJO DE DORRAO

Febrero 2025

Antecedentes

Con fecha septiembre de 2021 se elaboró un plan estratégico en el que se incidía en el problema energético y medioambiental existente a nivel mundial, manifestado a través de una disponibilidad limitada de los combustibles de origen fósil y el creciente calentamiento del planeta a través del efecto invernadero.
Cada vez más, las regiones están apostando por el ahorro en su consumo y la transición hacia un sistema energético con mayor presencia de fuentes renovables, dos retos que, además, ayudarán a combatir la magnitud del cambio climático por medio de la reducción de gases de efecto invernadero que los recursos energéticos tradicionales llevan asociados.
Por ello, las políticas energéticas deben ir dirigidas a fomentar el uso racional de la energía, apoyar la eficiencia energética y fomentar las energías renovables. Estas propuestas, si son tomadas en clave estratégica, pueden ir en beneficio de la economía local y del medio ambiente, ya que por un lado se reduce la factura energética y, con ello, se reduce la intensidad energética de la sociedad, y por otro lado se reduce la emisión de contaminantes que el consumo de los combustibles fósiles genera.
Así, la estrategia local en el ámbito energético a desarrollar debe primar las medidas de ahorro de energía, eficiencia energética y energías renovables, por su efecto favorable sobre el medio ambiente y su incidencia positiva en la economía local si así se planifica.
Ante esta realidad, el sector energético puede considerarse un sector potencialmente viable para la creación de empleo tanto por la creación de nuevas actividades económicas como por la reconversión de sectores castigados como la industria o la construcción hacia actividades relacionadas tanto con la creación de energía renovables como con actividades relacionadas con la eficiencia energética.

El municipio

La localidad de Dorrao/Torrano es un concejo perteneciente al ayuntamiento de Ergoiena, en el ámbito de la mancomunidad de Sakana, que cuenta con 109 habitantes censados.

La actividad económica principal se centra en pequeños productores de queso.

El Valle de Sakana en el que se enclava este pequeño municipio, no obstante, tiene un fuerte carácter industrial, con más de 20.000 habitantes, cuenta con más de 300 empresas industriales, muchas de ellas pymes, dedicadas al sector metalmecánico en el área del sector eólico y con presencia de empresas de fundición que compiten a nivel internacional en el mercado.

Para la elaboración del Plan estratégico de Dorrao se tuvieron en cuenta otras estrategias territoriales:

- Plan Estratégico de Sakana 2014-2020
  sakana2020-version-reducida-3-es.pdf (sakanagaratzen.com)

- Plan Energético Navarra 2030
  https://gobiernoabierto.navarra.es/sites/default/files/pen2030definitivo20171226comprimido.pdf

- Ley Foral del Cambio Climático y Transición energética
  21121 Anexo (navarra.es)

- Firma del Pacto de Alcaldías: El compromiso adquirido por el Ayto de Ergoiena al que pertenece el Concejo de Dorrao en relación con el Cambio Climático

- Plan de Acción por el Clima y la Energía Sostenible (PACES) *(en elaboración)*

Navarra

En Navarra, comunidad carente de recursos energéticos no renovables, se perfiló ya con la realización del primer Plan Energético, aprobado en 1996, como región pionera en energías renovables y trata de aprovechar las grandes oportunidades económicas que conlleva esta transición.

El Plan Energético de Navarra horizonte 2020, define el modelo energético de Navarra en 2020 y marca las directrices y medidas de actuación para alcanzarlo. Deben estar alineados con los objetivos estatales que a su vez se encuentran alineados con los objetivos europeos del paquete 20-20-20:

- 20% de cuota de las energías renovables en el consumo final bruto de energía.
- 20% de reducción del consumo de energía primaria en 2020.
- 20% de reducción de las emisiones de gases de efecto invernadero en 2020.

El objetivo general es maximizar la contribución de la producción, transformación y consumo de energía a la sostenibilidad de Navarra, en sus aspectos social, económico y ambiental.
Durante el proceso del Plan Estratégico se ha visto que en Sakana cada vez son más las personas, emprendedores y empresas que han empezado a trabajar o que han decidido transformar sus empresas hacia este sector. En cuanto a las energías renovables se han identificado nuevas oportunidades de negocio, por lo que se ve imprescindible analizar la viabilidad de los recursos energéticos de la comarca.
Durante el proceso del Plan Estratégico se remarcó que las energías renovables podían jugar un papel importante en el desarrollo socio-económico de Sakana.

Plan Estratégico de Sakana

El Valle de Sakana cuenta con una Agencia de Desarrollo Comarcal, dependiente de la mancomunidad de Sakana para llevar a cabo el Plan estratégico de Sakana.

Este Plan se centra en 4 áreas de actividad:

- Industria

- Energía

- Turismo

- Sector Agroalimentario

Dentro del área de la energía se pueden encontrar líneas de acción que forman parte de la estrategia municipal de aquellas entidades que forman parte del valle, como lo es en este caso el municipio de Dorrao.

EJE ESTRATÉGICO 1: MEJORA DEL POSICIONAMIENTO ESTRATÉGICO DE LAS EMPRESAS INDUSTRIALES

L.1.1. Fomentar el acceso de las empresas a las herramientas de apoyo para la mejora de su posicionamiento.
L.1.2. Impulso a la innovación.
L.1.3. Mejora de la gestión de los recursos humanos.
L.1.4. Fomento de la cooperación y mejora de la articulación inter-empresarial.

EJE ESTRATÉGICO 2: IMPULSAR LA CREACIÓN DE NUEVAS EMPRESAS
L.2.1. Impulsar el emprendimiento.
L.2.2. Gestión proactiva para la atracción de inversiones.

EJE ESTRATÉGICO 3: MEJORA DE INFRAESTRUCTURAS
L.3.1. Mejora de la oferta de suelo industrial.
L.3.2. Mejora del acceso a redes informáticas.
L.3.3. Mejoras en el ámbito educativo.

EJE ESTRATÉGICO 4: CONSTRUIR UNA IMAGEN POSITIVA Y ATRACTIVA DE LA COMARCA
L.4.1. Promoción de la comarca y de sus ventajas competitivas.
L.4.2. Impulsar y fortalecer dinámicas comarcales.
L.4.3. Impulsar relaciones con otras comarcas y agencias de desarrollo

EJE ESTRATÉGICO 2: PROMOCIÓN Y CREACIÓN DE NUEVOS PROYECTOS EMPRESARIALES ENERGÉTICO Y PROYECTOS VERDES
L.2.1. Impulsar el emprendimiento.
L.2.2 Promoción y creación de nuevos proyectos energéticos y proyectos verdes.
L.2.3. Gestión proactiva para la atracción de inversiones.

La creación de la Comunidad Energética es una de las acciones definidas en la L2.2 del Plan Estratégico de Sakana.

Plan estratégico del concejo de Dorrao

Se presentan a continuación los objetivos generales del plan estratégico:

1. IMPULSAR EL AHORRO Y LA EFICIENCIA ENERGÉTICA
2. PROMOVER LA GENERACIÓN ENERGÉTICA LOCAL Y RENOVABLE

Para impulsar el ahorro y la eficiencia energética la línea de trabajo a seguir por el concejo de Dorrao será:

- Mejorar la eficiencia energética de los edificios de propiedad municipal: rehabilitación de la casa del maestro y concejo viejo.

- Mejorar la eficiencia energética de las viviendas de la localidad. Ofreciendo a la población toda la información sobre las medidas que pueden adoptar para la eficiencia energética de sus viviendas y las ayudas existentes para ello.

- Desarrollar campañas de información y sensibilización ambiental dirigidas a la ciudadanía en materia de sostenibilidad energética. Para sensibilizar a la población en el uso responsable de la energía. Actividades de concienciación sociales sobre la necesidad de reducción del consumo energético y de la implantación y uso de energías renovables: videos, charlas divulgativas.

Para promover la generación energética local y renovable la línea de trabajo a seguir por el concejo de Dorrao será:

- Instalar sistemas de producción de electricidad mediante Energía Solar Fotovoltaica para autoconsumo conectadas a red: El proyecto de autoconsumo de Dorrao.
- Incrementar la instalación y el consumo de energías renovables. Mediante actividades informativa y formativas dirigidas a la población.
- Impulsar la creación de una comunidad energética en la localidad. Crear un marco de participación ciudadana para comenzar el desarrollo de la comunidad energética.

La misión y visión del proyecto

MISIÓN: Convertir el municipio en un referente nacional e internacional en eficiencia energética y uso de energías renovables.

VISIÓN: Dar un paso más allá del compromiso del Pacto de Alcaldías y ampliarlo al sector industrial, comercial y residencial como factor de mejora de la competitividad y mejora ambiental del territorio.

El concejo de Dorrao a establecido una clara misión, que no solo aborda el problema energético y medioambiental, sino que favorece la propia localidad, aportándole nuevos valores y atractivos que facilitan la fijación de población en este entorno.

Para ello, el concejo de Dorrao ha desarrollado un plan estratégico dividido en tres fases. Este plan comenzó a ejecutarse el 2022 y se prevé finalice el 2027, con la puesta en marcha de la comunidad energética de Dorrao para afrontar las necesidades energéticas de manera colectiva

Hay diferentes tipos de comunidades energéticas, y todas tienen en común el hecho de empoderar a la ciudadanía en el sector energético. Algunas encajan en una determinada figura jurídica (prevista en leyes y normativas) y otras no, pero todas ellas son comunidades energéticas y es importante llamarlas así.

Su importancia se debe, en primera instancia, al hecho que los ingresos se destinan a generar beneficios ambientales y socioeconómicos para la propia comunidad local, y en segundo lugar, porque son los propios ciudadanos/as los/las que ostentan el control de la comunidad de forma que garantizan su autonomía y promueven a la vez una democratización energética a nivel local.

Esto puede proporcionar a la ciudadanía un acceso justo a los recursos locales de energía renovable y ayudar, entre otras cosas, a combatir la pobreza energética o crear oportunidades de inversión para empresas locales, que permitan abordar las necesidades socioeconómicas de la comunidad, además de invertir en eficiencia energética.

La acción debe centrarse en aportar la información precisa y actualizada sobre las posibilidades existentes, así como los cambios normativos a medida que se vayan produciendo, y las ayudas existentes para este tipo de iniciativas. También, a facilitar dentro de las competencias municipales, los procedimientos administrativos y técnicos involucrados.

Las herramientas que el concejo puede desarrollar para el empoderamiento de la ciudadanía serán:

- Evaluar el potencial de autoconsumo compartido en la localidad.

- Realizar campañas informativas y sesiones de trabajo a comunidades de vecinos/as.

- analizar los potenciales interesados/as en la participación de comunicades energéticas: vecinos/as, empresas...

- Promover la constitución de una comunidad energética complementándola con el proyecto de autoconsumo del concejo de Dorrao.

Para el desarrollo del plan estratégico de Dorrao se han diferenciado 3 fases, de las cuales ya se ha ejecutado al 100% la primera de ellas: Instalación por parte del concejo de Dorrao de 2 instalaciones fotovoltaicas en 3 cubiertas de edificios de titularidad municipal para abastecer los consumos municipales.

Fase1:

En esta fase se promoverá la generación de energía local y renovable, y para ello se ha ejecutado el proyecto de autoconsumo del concejo de Dorrao y las actividades formativas e informativas para favorecer el desarrollo de este tipo de instalaciones en al localidad.

Mediante la ejecución del proyecto se ha conseguido abastecer energía eléctrica de origen renovable a los 7 locales de titularidad municipal que se presentan en el siguiente cuadro.

Nombre	Descripción	Tarifa
Alumbrado público - ES0021000006597965JK	C/ ELIZBIDE KALEA (BAJA), S/N, Bajo 1 - DORRAO	2.0 TD
Consultorio/Concejo - ES0021000006597929NP	C/ ELIZBIDE KALEA (BAJA), 7, Bajo 1 - DORRAO	2.0 TD
Frontón - ES0021000006597927NY	C/ ELIZBIDE KALEA (BAJA), 5, Bajo 1 - DORRAO	2.0 TD
Iglesia - ES0021000006597952JP	C/ ELIZBIDE KALEA (BAJA), 48, Bajo 1 - DORRAO	2.0 TD
Concejo viejo - ES0021000006597880XM	C/ ALTA, 3, Bajo 1 - DORRAO	2.0 TD
Casa Maestros- ES0021000006597921NT	C/ ALTA, 21, Bajo - DORRAO	2.0 TD
Centro Social - ES0021000006597931NX	C/BAJA 9,2 Bajo 1 DORRAO	2.1

Se han sustituido los nombres de los locales casa del maestro y concejo viejo por oficina y Herriko etxe, pero son los mismos locales. Mientras se ejecutaba el proyecto de autoconsumo, se rehabilitó el edificio donde se sitúan los locales, tras la obra se creó la oficina y herriko etxe, por eso el cambio de denominación. En la tabla aparecen los nombres que se dieron como CUPS, las denominaciones antiguas.

La energía eléctrica que abastece a estos locales públicos procede de 2 instalaciones fotovoltaicas que se han instalado en las cubiertas de edificios municipales.

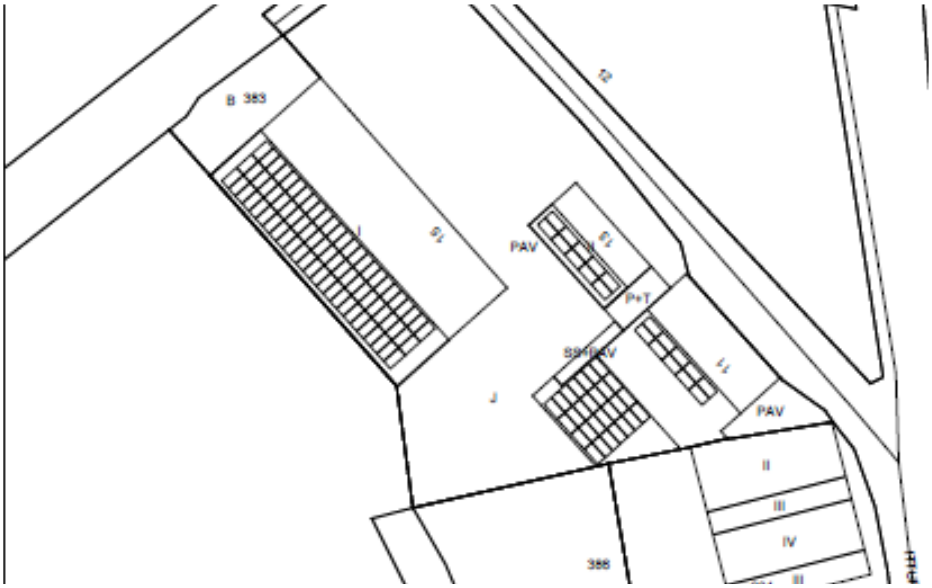
Las instalaciones fotovoltaicas están ubicadas dentro del casco urbano del concejo de **DORRAO** y ocupa parciamente las cubiertas de 3 locales

En la siguiente tabla se presentan las coordenadas decimales del punto central de la ubicación del proyecto y su altitud.

UBICACIÓN Y COORDENADAS	
NOMBRE	DORRAO PLANTA FOTOVOLTAICA DOR FV
UBICACIÓN	ERGOIENA , DORRAO, POLIGONO 7, PARCELA MIXTA 383
COORDENADAS INS. 1 FRONTON	X:580,524 / Y: 4,747,841

COORDENADAS INS. 2, EDIFICIO 1	X:580,549 / Y: 4,747,839
COORDENADAS INS. 3, EDIFICIO 2	X:580,557 / Y: 4,747,828
COORDENADAS INS. 4, EDIFICIO 3	X:580,549 / Y: 4,747,821

En el imagen adjunta puede observarse la distribución en planta.º 1



Además del proyecto de autoconsumo ejecutado se han desarrollado actividades formativas e informativas para la corporación concejil como para la población en general, para incrementar la instalación y el consumo de energías renovables.

La segunda fase del plan estratégico está en proceso de ejecución, se está diseñado el calendario y programando las actividades, donde solo falta confirmar las fechas.

Fase 2: Proceso participativo para definir las funciones, objetivos y forma de gestión de la Comunidad Energética.

El objetivo principal de esta fase será desarrollar Acciones de formación como divulgativas para favorecer la participación ciudadana en el proceso de elaboración de hoja de ruta de la comunidad energética. Y designar al grupo motor para dinamizar todo el proceso.

Para lograr los objetivos mencionados se requiere de la implicación ciudadana para una participación por lo que las actividades ofrecidas se presentaran de una forma atrayente. Se están diseñando videos cortos con información sobre comunidades energéticas, sobre lo que son y los beneficios que este tipo de iniciativas reportan a las localidades y a sus habitantes. Donde se incluye el programa de actividades y las charlas divulgativas organizadas por el concejo, las fechas todavía están pendientes de confirmar.

En esta fase se definirá el marco teórico de la tercera fase analizando todas las posibilidades y desarrollado la toma de decisiones. Para ella hará falta:

1. Identificar a los posibles miembros de la comunidad energética. Comenzará por informar sobre estas iniciativas a la población y analizar los beneficios de unirse a una comunidad energética.
2. Construir un equipo de trabajo: un grupo fuerte, motivado y flexible
   - Lo importante en este primer impulso es definir un buen grupo motor (convocado desde la ciudadanía y la administración) compuesto por personas motivadas con ganas de impulsar un proyecto cooperativo en la localidad.
3. Generar alianzas con otras entidades:
   - Para tener acompañamiento técnico, y diferentes servicios enfocados a facilitar la toma de decisiones.
   - Recibir acompañamiento y mediación de proyectos asociativos, para encontrar la forma jurídica más adecuada para la comunidad energética; así como para resolver paso a paso las necesidades administrativas asociadas a este proceso.
4. Buscar líneas de financiación.

Fase 3: Puesta en Marcha de la Comunidad Energética Dorrao.

Para su puesta en marcha será necesario:

1. Decidir la forma jurídica para la comunidad energética, y constituir la comunidad energética: Conformación y registro legal de la comunidad.
2. Solicitar las diferentes líneas de ayuda para financiar el proyecto: subvenciones públicas, crowdfunding o las que se hayan decidido en la fase previa.
3. Implementación de sistemas de energía compartida. La implantación de nuevas instalaciones de paneles solares en terrenos compartidos y edificios privados, Incluyendo el proyecto de autoconsumo del concejo de Dorrao para completar las instalaciones de la comunidad energética.
4. Puesta en marcha de la comunidad energética como tal.

ESQUEMA DEL PLAN ESTRATEGICO DEL CONCEJO DE DORRAO:

FASE	OBJETIVO	ACCIONES	DESCRIPCIÓN	CRONOLOGIA y estado de ejecució
1	**PROMOCION DE LA IMPLANTACION DE ENERGIAS RENOVABLES FOTOVOLTAICAS EN EL CONCEJO DE DORRAO.**	1.1. Proyecto de autoconsumo eléctrico del Concejo de Dorrao. Para servir como modelo y un ejemplo a seguir tanto por los habitantes de la localidad como de las empresas ubicadas en esta, y demás entidades locales.	Instalación por parte del concejo de Dorrao de 2 instalaciones fotovoltaicas en 3 cubiertas de edificios de titularidad municipal con un sistema de acumulación para abastecer los consumos municipales Edificio del Concejo, Centro Social, herriko etxe, oficina y frontón, e instalaciones de propiedad municipal (alumbrado público). Siendo 55,8 kWp en placas fotovoltaicas y 110 kWh en acumulación.	Ejecutado entre 2022-2024
	INCREMENTAR LA INSTALACIÓN Y EL CONSUMO DE ENERGÍAS RENOVABLES	1.2. Participar en la redacción del nuevo Plan Municipal Urbanístico del ayuntamiento de Ergoinea para favorecer la implantación de instalaciones fotovoltaicas.	El concejo de Dorrao a participado activamente en el desarrollo del Plan Urbanistico Municipal de Ergoiena. Solicitando al ayuntamiento que favorezca este tipo de instalaciones.	Ejecutado en 2023
		1.3. Elaboración de ordenanzas reguladoras para instalaciones fotovoltaicas.	Por falta de normativa vigente que aborda el tema de las placas solares solicita al ayuntamiento la elaboración de ordenanzas reguladoras para este tipo de instalaciones, para agilizar el proceso de autorización.	Ejecutado en 2023
		1.4. Acciones divulgativas sobre las instalaciones fotovoltaicas para los	1.4.1. Charla informativa para dar a conocer las instalaciones fotovoltaicas, sus componentes, los diferentes tipos, proceso de	Ejecutado en 2024

		habitantes del concejo.	montaje, mantenimiento, así como los costes involucrados y las subvenciones existentes. 1.4.2 Edición de un documento explicativo con la información de la charla que se repartió en las viviendas de la localidad. Para que las personas que no asistieron a la charla tuvieran la información.	Ejecutado en 2024
2	**IMPULSAR LA CREACIÓN DE UNA COMUNIDAD ENERGÉTICA EN LA LOCALIDAD PROCESO PARTICIPATIVO PARA DEFINIR LAS FUNCIONES, OBJETIVOS Y FORMA DE GESTIÓN DE LA COMUNIDAD ENERGÉTICA**	a. Acciones divulgativas para dar a conocer las comunidades energéticas y las posibilidades que ofrecen.	2.1.1. Realización de diferentes talleres, en los que se dará apoyo a los usuarios a la hora de interpretar la factura eléctrica, así como información sobre las diferentes posibilidades de compra de energía verde que existen en el mercado y las diferentes formas de ser más eficientes energéticamente. 2.1.2. Charlas informativas sobre comunidades energéticas y experiencias de otras localidades. 2.1.3. Creación de redes de colaboración con centros formativos tanto del valle como de la Comunidad Foral.	En proceso de ejecución 2025. En proceso de ejecución 2025. Se prevé se ejecute durante el curso 2025-2026
		2.2. Proceso participativo para definir las funciones, objetivos y forma de gestión de la comunidad energética.	2.2.1. Proceso participativo para definir las funciones, objetivos y forma de gestión de la Comunidad Energética. Diseñar la hoja de ruta y desarrollar el calendario de participación. Designar al grupo motor para dinamizar todo el proceso. Generar alianzas con otras entidades para tener	Se prevé se ejecute durante el curso 2025-2026

			asesoramiento, Y buscar líneas de financiación.	
3	**PUESTA EN MARCHA DE LA COMUNIDAD ENERGÉTICA DORRAO**	3.1. Puesta en marcha de la comunidad energética Dorrao, en la que todos los habitantes como las empresas ubicadas en esta localidad puedan formar parte.	3.1.1. Conformación y registro legal de la comunidad. 3.1.2. Solicitar las diferentes líneas de ayuda para financiar el proyecto. 3.1.3. Implementación de sistemas de energía compartida. 3.1.4. Puesta en marcha de la comunidad energética como tal.	Se prevé que todo el proceso de ejecución finalice el 2027.

Consideraciones del Proyecto Integral

A) el origen o lugar de fabricación (nacional, europeo o internacional) de los componentes de la instalación y su impacto medioambiental.

La instalación se ha ejecutado con materiales existentes en el mercado a precio de mercado.

Actualmente casi el 100% de las placas fotovoltaicas que se instalan en Europa son fabricadas en China. Aunque la marca de las placas sea europea, la fabricación de componentes se hace en China, por lo que resulta prácticamente imposible instalar placas fotovoltaicas que no hayan sido fabricadas en China. Las instaladas son del fabricante TRINA SOLAR, que es un fabricante nacional

En cuanto a otros componentes de la instalación, como el inversor, que es verdadero corazón y gestor de la instalación, se ha instalado de la marca Kostal, de la empresa alemana Kostal Solar Electric. Este elemento de la instalación es el elemento principal de la instalación, ya que se encarga de gestionar y optimizar la eléctrica producida, con gestión de sombras, autoaprendizaje, etc.

Las baterías, al igual que las placas, son fabricadas casi al 100% en China. Las instaladas en este proyecto son del fabricante BYD, que es un conglomerado multinacional chino.

Los materiales de estructura, fijaciones, cables, etc de la instalación, son de origen europeo, ya que hay suficiente oferta como para poder atender la demanda actual de instalaciones y no hay problemas de suministro para su adquisición.

La energía fotovoltaica que se genera a través de placas solares, la entendemos como una energía limpia, amable con el medio ambiente, no produce ruido, polución química u otros impactos con el ambiente.

No requiere combustión alguna por lo que no se genera CO2 y con ello favorece la no aparición del efecto invernadero.

Las placas solares fundamentalmente se fabrican con Silicio que es un elemento químico que está en la naturaleza de forma masiva. No se trata de un elemento que su extracción altere la estructura del terreno.

No produce contaminación ni vertidos, esto mantiene el subsuelo (acuíferos) y aguas superficiales de la corteza terrestre libre de contaminación.

Las plantas vegetales, en la fotosíntesis, transforman alrededor de un uno por ciento de la energía del Sol que les llega en biomasa, y toda la vida en la Tierra se sostiene gracias a esta producción de biomasa por parte de las plantas vegetales

Las placas solares fotovoltaicas pueden transformar en energía eléctrica alrededor de un 10 por ciento de la energía que reciben del Sol. Teniendo en cuenta solo estos datos, podemos decir que el potencial de la energía fotovoltaica es enorme y esperanzador.

Sin embargo, un mito muy extendido de la energía fotovoltaica es que el consumo de energía para confeccionar los paneles fotovoltaicos es mayor que toda la energía eléctrica que producen en su vida útil. Es la llamada energía cautiva de los paneles fotovoltaicos. La energía cautiva, o también llamada energía incorporada, es la energía consumida en todo el proceso de producción

de un producto, desde el diseño, la obtención de las materias primeras, la construcción, el transporte... En el caso de los paneles fotovoltaicos la mayor parte de la energía se consume en el proceso de confección de las células de silicio cristalino (alrededor del 93% de la energía total).

Por suerte, gracias a estudios recientes se ha demostrado que en un período de 2 a 3,5 años se recupera la energía invertida en la construcción, manipulación e instalación de un panel fotovoltaico siendo el tiempo de vida útil de un panel, unos 30 años.

La fabricación, uso y disposición final de paneles fotovoltaicos resulta cada vez menos contaminante. Es por ello que se establece que actualmente las instalaciones con energía solar evitan más contaminación que incluso la que se ha generado en los últimos 40 años del desarrollo de esta tecnología. Y es de ahí que nace la premisa que establece que los paneles solares producen energía limpia que ayuda a combatir el cambio climático.

El origen de las estructuras de aluminio y componentes auxiliares relacionados con el anclaje de las placas es de la marca **SUNFER**, empresa nacional, con un compromiso medioambiental tal y como se puede observar en la información de la empresa https://sunferenergy.com/sostenibilidad/

El origen de las placas FV, es de origen Chino (TRINA SOLAR), esta empresa cuenta con un sistema de producción sostenible, en el adjunto correspondiente, se aporta la información disponible de la empresa fabricante y de sus productos.

El origen del **cableado es de origen europeo el fabricante es PRYSMIAN**, tiene fabrica en ES.

El **cable solar** de Prysmian Group está diseñado específicamente para aplicaciones de energía solar, y la empresa se enfoca en crear productos que sean tanto eficientes como sostenibles. A pesar de los beneficios de la energía solar en términos de reducción de emisiones de gases de efecto invernadero, los cables también pueden tener un impacto ambiental, que generalmente está relacionado con la producción de materiales y la gestión del ciclo de vida de los productos.

A continuación, pasa a explicarse algunos de los aspectos más relevantes sobre el impacto medioambiental de los cables solares de Prysmian y cómo la empresa aborda este desafío:

1. Materiales sostenibles y reciclaje

Prysmian ha comenzado a incorporar materiales más sostenibles en la fabricación de sus cables solares. Utilizan compuestos y recubrimientos que tienen un menor impacto ambiental en su producción, y buscan optimizar los procesos de reciclaje tanto para cables nuevos como para cables en desuso.

Además, los cables solares de Prysmian están diseñados para ser resistentes a condiciones extremas, lo que ayuda a reducir la necesidad de reemplazos frecuentes, contribuyendo indirectamente a una menor generación de residuos.

2. Eficiencia energética

Los cables solares de Prysmian están diseñados para mejorar la eficiencia de las instalaciones solares. Al garantizar que la transmisión de electricidad generada por los paneles solares sea más eficiente, contribuyen indirectamente a una mayor eficiencia en la producción de energía limpia, lo cual ayuda a reducir la huella de carbono de las instalaciones solares.

3. Cables reciclables

La compañía ha trabajado en desarrollar cables solares con materiales más fáciles de reciclar. A medida que más paneles solares llegan al final de su vida útil, los cables también deben ser reciclados adecuadamente para evitar la acumulación de desechos en los vertederos. Prysmian ha implementado estrategias para asegurar que sus cables puedan ser gestionados al final de su vida útil de una manera responsable.

4. Responsabilidad ambiental en la fabricación

Prysmian tiene iniciativas para reducir el impacto ambiental de sus fábricas, mejorando la eficiencia energética en la producción de cables y reduciendo las emisiones de CO_2. Están comprometidos con el cumplimiento de las regulaciones ambientales locales e internacionales, y buscan constantemente mejorar sus procesos de fabricación.

5. Impacto a largo plazo

Aunque los cables solares de Prysmian contribuyen a la transición hacia fuentes de energía renovable y sostenible, como todas las tecnologías, su producción y disposición tienen un impacto ambiental en términos de consumo de recursos naturales y emisiones. Sin embargo, dado el rol crucial que los sistemas solares juegan en la reducción de emisiones de gases de efecto invernadero, el impacto de los cables es relativamente bajo en comparación con los +beneficios globales de la energía solar.

6. Certificaciones ambientales

Prysmian también busca obtener y mantener certificaciones de sostenibilidad en sus productos y operaciones, como **ISO 14001** para la gestión ambiental y **Ecolabels**, lo que refleja su compromiso con prácticas respetuosas con el medio ambiente.

Conclusión:

El impacto medioambiental de los cables solares de Prysmian es relativamente bajo cuando se considera su función en la cadena de valor de la energía renovable. La empresa está comprometida con la sostenibilidad y se enfoca en reducir la huella de carbono a lo largo del ciclo de vida de sus productos, desde la fabricación hasta el reciclaje. Los cables solares, en particular, contribuyen a una mejor eficiencia energética en las instalaciones solares, ayudando indirectamente a reducir las emisiones globales.

El origen de los Inversores **KOSTAL** es Alemania.

KOSTAL tiene un enfoque claro hacia la sostenibilidad y la protección del medio ambiente, con varios compromisos ambientales en sus actividades y productos. Estos son algunos de los aspectos clave:

1. Compromisos Ambientales de KOSTAL:

- Eficiencia Energética: KOSTAL se compromete a la producción de componentes y sistemas que optimicen el uso de energía, especialmente a través de sus soluciones en energía solar (inversores y sistemas fotovoltaicos). Buscan maximizar la eficiencia energética y reducir el impacto ambiental.
- Energía Renovable**:** La compañía está comprometida con el fomento de las energías renovables, especialmente mediante la fabricación de inversores solares. Estos

inversores permiten transformar la energía solar en electricidad utilizable, reduciendo la dependencia de fuentes de energía no renovables y ayudando a mitigar el cambio climático.

- Reducción de Emisiones de CO_2: KOSTAL busca constantemente reducir las emisiones de CO_2 en sus procesos de fabricación y en sus productos. La empresa implementa tecnologías más limpias y sostenibles en sus fábricas y en la cadena de suministro.
- Reciclaje y Gestión de Residuos**:** KOSTAL también está comprometido con la gestión responsable de residuos y el reciclaje. Parte de sus productos están diseñados para ser reciclables al final de su vida útil, y se toman medidas para reducir el impacto ambiental de los materiales utilizados en sus fábricas.

2. Huella de Carbono de los Inversores KOSTAL:

Los inversores solares de KOSTAL, al ser parte de las soluciones de energía renovable, tienen un impacto ambiental positivo al ayudar a reducir la huella de carbono de las viviendas e industrias que los utilizan. El uso de energía solar mediante estos inversores genera electricidad limpia, lo que contribuye a disminuir las emisiones de gases de efecto invernadero (GEI) a largo plazo.

Aunque los inversores requieren energía para su fabricación, como cualquier producto industrial, la huella de carbono asociada a la producción de los inversores depende de varios factores, como:

- Materiales usados en la fabricación: KOSTAL, como otras empresas tecnológicas, busca minimizar el uso de materiales con un alto impacto ambiental, utilizando componentes reciclables y responsables con el medio ambiente.
- Eficiencia en la producción: KOSTAL ha implementado prácticas de producción más sostenibles, como la optimización de procesos y el uso de energías renovables en sus fábricas, lo cual reduce su huella de carbono en la producción de los inversores.

Aunque no hay una cifra exacta y universal de la huella de carbono de cada inversor solar KOSTAL en términos de su fabricación y uso, se puede decir que el beneficio ambiental de los inversores solares a largo plazo es significativamente mayor que su huella de carbono inicial. El uso de energía solar reduce las emisiones de CO_2 que se generarían de otra manera al depender de fuentes convencionales de electricidad.

3. Certificaciones y Estándares:

KOSTAL también sigue estándares internacionales en cuanto a sostenibilidad y calidad ambiental. A menudo sus productos están certificados con etiquetas y normas que aseguran su bajo impacto ambiental, como las certificaciones **ISO 14001** (gestión ambiental) y **ISO 50001** (gestión de la energía), entre otras.

En resumen, KOSTAL está comprometida con la sostenibilidad a través de la producción de soluciones energéticas eficientes y respetuosas con el medio ambiente. La huella de carbono de sus inversores solares, aunque presente en la fase de fabricación, es compensada a largo plazo por el ahorro de emisiones que generan al utilizar energía solar limpia.

Las baterías BYD provienen de **BYD Company Limited**, una de las principales empresas chinas de tecnología y manufactura, fundada en 1995 por Wang Chuanfu. El origen de las baterías BYD está estrechamente relacionado con la visión de la empresa de ser un líder global en energía limpia y sostenibilidad.

BYD, reconocido fabricante de vehículos eléctricos y baterías ha adoptado un enfoque integral hacia la sostenibilidad y la reducción de la huella de carbono en la producción de sus baterías.

El Compromiso Ambiental de BYD:

- Transición a Energías Renovables: BYD ha cesado la producción de vehículos de combustión interna desde marzo de 2022, enfocándose exclusivamente en vehículos eléctricos e híbridos. Esta estrategia busca eliminar las emisiones de combustión y contribuir a la protección del planeta.
- Iniciativas de Reciclaje: La empresa ha implementado un sistema pionero de reciclaje de baterías, recuperando materiales valiosos para nuevas baterías y minimizando la contaminación.
- Proyectos de Energía Limpia: BYD ha establecido el primer Campus Industrial Cero Carbono para una marca automotriz china en su sede global en Shenzhen, demostrando su liderazgo en prácticas sostenibles.

Huella de Carbono:

- Producción de Baterías: La fabricación de baterías implica impactos ambientales significativos, como la extracción de recursos y emisiones de carbono. BYD utiliza principalmente baterías de fosfato de hierro y litio (LFP), que requieren menos materiales como cobalto y níquel, reduciendo así los impactos ambientales asociados.
- Eficiencia Energética**:** Los métodos de producción de baterías LFP de BYD suelen ser más eficientes energéticamente, lo que genera menores emisiones generales durante la fabricación. Además, la empresa está integrando fuentes de energía renovable en sus procesos de fabricación para reducir aún más su huella de carbono.

En resumen, BYD demuestra un compromiso sólido con la sostenibilidad y la reducción de la huella de carbono en la producción de sus baterías, enfocándose en energías renovables, reciclaje y procesos de fabricación más ecológicos.

B) los criterios de calidad o durabilidad (garantías, estándares de calidad, etc.) utilizados para seleccionar los distintos componentes. Además, en el caso de incluir instalaciones eléctricas superiores a 100 kW de potencia nominal, se detallará interoperabilidad de la instalación y su potencial para ofrecer servicios al sistema.

La instalación que nos ocupa es menor a 100 kW de potencia nominal.

Los criterios de calidad o durabilidad en base a los que se ha tomado la decisión de compra de los materiales han sido los siguientes:

- Inversor: dado que es el elemento más importante de la instalación, ya que es el corazón y gestor de la energía, se ha optado por la compra de un inversor de un proveedor europeo de garantías, que ofrece productos de alta calidad, durabilidad, eficacia y

eficiencia, como es Kostal. Los estándares de calidad, versatilidad, robustez, rendimiento, gestión y control de la instalación que ofrece en sus productos, son de los mejores que se puede encontrar a precios razonables en el mercado.

- Placas: existe gran variedad de placas fotovoltaicas en el mercado, todas ellas fabricadas en China. Para este componente de la instalación, se ha optado por elegir las de la marca TRINA SOLAR , por ser una marca reconocida y que por potencias y dimensiones de placas, se adapta muy bien a las especificaciones del proyecto. Todas las placas del mercado ofrecen vidas útiles de 30 años, por lo que la garantía es la misma para todas ellas

- Baterías: existe gran variedad de placas fotovoltaicas en el mercado, todas ellas fabricadas en China. Para este componente de la instalación, se ha optado por elegir las de la marca BYD , por ser una marca reconocida y que por potencias, prestaciones y número de ciclos de carga y descarga útiles, es una de las mejores del mercado y se adapta muy bien a las especificaciones del proyecto.

- Estructura de anclaje y accesorios: son componentes universales, que no requieren de ninguna especificación técnica concreta que haga que tengan mejor o peor calidad. Se han elegido los que el proveedor de placas solares recomienda.

- Cableado: son componentes universales, que no requieren de ninguna especificación técnica concreta que haga que tengan mejor o peor calidad. Se han elegido los estándar que cumplen con la legislación a aplicar

Los periodos de garantías son los estándares en este tipo de productos:

- Placas 25 años, vida útil de los materiales, y garantía de producción 25 a con una perdida inferior al 10% al final de este periodo.
- Estructuras 10 años.
- baterías, 10 años. con una reducción de la capacidad entorno al 70%.
- Instalaciones eléctricas 10 años

Los criterios para seleccionar los componentes principales de la instalación han sido:

- Los que tienen las garantías de calidad establecidos.
- Los que estaban disponibles en el mercado en el momento de la ejecución de la obra.
  NOTA: Los materiales que no estaban disponibles en el mercado en el momento de la ejecución del proyecto fueron sustituidos, por otros de similares características, validados y garantizados por la dirección facultativa, por materiales disponibles en el mercado.

Todos los productos que forman parte de la instalación son de la clasificación tier one esto indica que:

Hace referencia a las empresas que fabrican paneles solares de la más alta calidad y que tienen una reputación consolidada en la industria. Estas empresas son consideradas como las más fiables, innovadoras y competitivas, y suelen tener un historial demostrado de producción consistente y entregas a gran escala. Ser Tier One en este contexto implica varios factores clave:

1. Calidad del producto: Las empresas Tier One producen paneles solares con alta eficiencia, durabilidad y fiabilidad. Esto se debe a que utilizan materiales de primera calidad y tecnologías avanzadas en sus procesos de fabricación.
2. Capacidad de producción: Tienen la capacidad de fabricar grandes volúmenes de paneles solares de manera consistente, lo que les permite abastecer tanto a mercados locales como globales.
3. Historial financiero sólido: Las empresas Tier One en el sector fotovoltaico suelen ser grandes corporaciones con estabilidad financiera, lo que les permite asegurar el suministro a largo plazo y mantener una relación confiable con sus clientes y proveedores.
4. Garantías y soporte: Estas empresas ofrecen garantías extensas para sus productos, lo que refleja la confianza en la calidad y la longevidad de los paneles solares que fabrican.
5. Innovación tecnológica: Las empresas Tier One invierten fuertemente en investigación y desarrollo (I+D) para mejorar la eficiencia y el rendimiento de sus paneles solares, y para mantenerse competitivas en un mercado que está en constante evolución.
6. Cumplimiento normativo: Cumplen con los estándares internacionales de calidad y tienen las certificaciones necesarias para garantizar la seguridad y eficiencia de sus productos.

En resumen, una empresa Tier One en el sector fotovoltaico es un fabricante líder que ofrece productos de alta calidad, tiene un historial confiable y una capacidad para satisfacer las demandas globales de energía solar.

C) Impacto sobre las Pymes y autónomos que se espera que tenga la puesta en marcha y mantenimiento del proyecto y estimación de su impacto sobre el empleo local y sobre la cadena de valor industrial local regional y nacional.

De las conclusiones del Plan estratégico de Sakana se extrae que la industria es el sector con más peso en el valle de Sakana, tanto en valor añadido como en nivel de empleo.

La reestructuración y competitividad de la economía de la zona, debe basarse (de una forma significativa) en este sector. Otras experiencias de desarrollo local muestran que el motor de desarrollo en los cambios de los modelos productivos del territorio se apoya en el tejido productivo ya existente.

Las empresas del sector de la energía tienen un papel clave en la activación y articulación del desarrollo. Tanto en actividades relacionadas con I+D+I, o como en la búsqueda de actividades con un alto valor añadido, como en el caso de las comunidades energéticas. También tiene un papel importante en la creación de redes de colaboración entre empresas, implantación de prácticas en este sentido, formas de gestión innovadoras y eficientes, internacionalización o en la diversificación del tejido empresarial.

Existen experiencias cercanas como la Microrred de Lizarraga en el valle, que ha servido de piloto de experimentación para que la empresa del valle Eseki, encargada de ejecutar el proyecto, pueda desarrollar su modelo de negocio de manera demostrativa.

En este caso con la creación de la comunidad energética de Dorrao de manera demostrativa, no sólo se abastecerá la demanda energética del municipio de manera sostenible, sino que desarrollará una herramienta local y participativa capaz de implementar la estrategia de un muevo modelo de energía, movilidad y consumo responsable.

Todo ello favorecerá una economía a pequeña escala entre productores, usuarios, empresas de servicios y revertirá sus beneficios en la comunidad, creando empleo a nivel local y articulando una red de colaboración en el propio municipio, interconectada con el valle y con Navarra.

Las instalaciones fotovoltaicas ejecutadas, sirven de ejemplo claro y demostrativo de la bondad de esta tecnología para la generación de energía eléctrica renovable y para la descarbonización. Se espera que estas instalaciones sean el punto de partida para la creación de una comunidad energética local.

El concejo de Dorrao, es una organización administrativa muy pequeña en la que es muy complicado contar con los datos requeridos, no se realizan estudios ni se disponen de datos a estos niveles de detalle.

El impacto de un proyecto fotovoltaico en el empleo local puede ser significativo, tanto a corto como a largo plazo, y se puede observar en diversas áreas. Aquí se indican algunos de los efectos clave:

1. Creación de empleo directo

- Construcción e instalación: Durante la fase de construcción del proyecto, se requieren trabajadores para tareas como la instalación de paneles solares, la construcción de infraestructura, la conexión a la red eléctrica, entre otras. Esto puede generar empleo en la comunidad local, desde obreros hasta técnicos especializados.

  Se estima que se generan unas **750** jornadas de trabajo

- Operación y mantenimiento: Una vez que la planta fotovoltaica está en funcionamiento, se requieren trabajadores para tareas de mantenimiento y operación, como la vigilancia de sistemas, limpieza de paneles, reparación de equipos y control de producción. Dependiendo del tamaño del proyecto, esto puede generar empleos permanentes a largo plazo.

  Se estima que se pueden generar en labores de operación y mto , unas **15 jornadas** / año

2. Desarrollo de capacidades y formación

- Capacitación técnica: Los proyectos fotovoltaicos a menudo requieren personal con habilidades técnicas especializadas. Esto puede generar oportunidades para la formación y capacitación de la población local en áreas como energías renovables, electrónica, electricidad, mecánica, etc.
- **Transferencia de conocimientos**: Las empresas que desarrollan proyectos fotovoltaicos pueden colaborar con universidades o centros educativos locales para fomentar la capacitación continua de los trabajadores, lo que mejora el perfil técnico de la región.

Difícil de cuantificar. Sin datos para su evaluación.

3. Efectos indirectos en sectores complementarios

- **Proveedores locales**: Los proyectos fotovoltaicos pueden generar una demanda de materiales y servicios complementarios, como componentes electrónicos, equipos de construcción, transporte y logística. Esto puede beneficiar a las empresas locales que suministran estos productos y servicios.
- **Servicios relacionados**: Además de la construcción y mantenimiento, surgen necesidades en sectores como la seguridad, la limpieza, la administración y la gestión de proyectos, lo que también puede traducirse en más empleos para la comunidad.

  Difícil de cuantificar. Sin datos para su evaluación.

4. Generación de ingresos y desarrollo económico

- **Aumento de los ingresos locales**: El empleo generado por la planta fotovoltaica, así como los contratos con proveedores locales, puede incrementar los ingresos de las familias y negocios de la zona.
- **Impuestos y royalties**: Los proyectos fotovoltaicos también pueden generar ingresos fiscales para los gobiernos locales a través de impuestos sobre la propiedad o royalties de explotación de recursos naturales. Esto puede ser reinvertido en la comunidad en servicios e infraestructura.

  Difícil de cuantificar. Sin datos para su evaluación.

D) impactos positivos previsto sobre el municipio y el entorno en términos sociales en particular en relación con el reto demográfico, así como ambientales y económicos.

En estos años desde la Agencia Desarrollo de Sakana, dentro del marco del Plan Estratégico de Sakana se han ido identificando los retos de despoblación a los que se enfrentan pequeños municipios rurales como Dorrao... Por ejemplo, el reto de una movilidad limitante, de una tecnología que no llega a todos los rincones, de una población que está envejeciendo con el pueblo, de las carencias en salud y educación, de la desaparición del tejido comercial, de la inexistencia de viviendas de calidad para nuevos pobladores, de la falta de una nueva gobernanza público-privada, de la necesidad de nuevos liderazgos transformadores.

Pero al mismo tiempo se han impulsado, a diferentes escalas, soluciones tecnológicas para el territorio, nuevas tendencias en ocio y cultura (que van desde el patrimonio a la agricultura), personas emprendedoras que están creando empresas sociales, la creación de espacios aglutinadores del talento y las ideas como DINABIDE, el interesante apoyo de ayudas públicas y privadas complementarias, la capacidad de coordinarse desde diferentes organizaciones y territorios,… En definitiva, una estrategia para hacer frente a todos estos factores y revertir esa tendencia de despoblación.

El poder abordar el reto desde la comunidad energética es clave para alcanzar el objetivo y son ya varias acciones las que se están trabajando desde el concejo:

- Alquiler de Viviendas sociales. Estas formarán parte de la propia comunidad energética y sus cubiertas podrán ser generadoras de la energía compartida en la comunidad.
- Instalación de puntos de recarga de vehículos eléctricos.
- Modificación de la fiscalidad

Son varias las mejoras que podemos subrayar sobre el municipio:

- Mejora medioambiental por reducción de emisiones de CO2. Por un lado, se reduce la factura energética y, con ello, se reduce la intensidad energética de la localidad, y por otro lado se reduce la emisión de contaminantes que el consumo de los combustibles fósiles genera.
- Mejora económica por el ahorro de gasto eléctrico. La disminución de los gastos que provienen del consumo energético del concejo de Dorrao ofrece la posibilidad de aumentar el gasto en otros sectores, ya sea de inversión a nivel dotacional incluso de servicios que pueden mejorar la calidad de vida de las personas que viven en la localidad.
- Mejoras para el municipio, por modernización e innovación energética, renovando la imagen de las pequeñas localidades rurales. Dejando atrás la visión de pueblos subdesarrollados tecnológicamente, promocionando la compatibilidad de entorno rural y tecnología de última generación, creando una nueva visión actualizada del entorno rural que apuesta por energías renovables, por el cuidado de sus habitantes como del medio ambiente.

El concejo de Dorrao se encuentra en riesgo intenso de despoblación, según el estudio y mapa de municipios en riesgo de despoblación que la Dirección General de Administración Local y Despoblación elaboró en 2021. El mayor reto al que tienen que enfrentarse estas pequeñas localidades es el reto demográfico.

Este concejo requiere de intervenciones urgentes para garantizar su salvaguarda, cuenta con poco más de cien habitantes y la mayoría de edad avanzada. Esta pequeña localidad no solo es un lugar, un conjunto de casas… es cultura, es trasmisión intergeneracional, es conocimiento y gestión del medio natural, es diversidad, es vida…

Esta puesta en marcha de energías renovables de autoconsumo en el concejo de Dorrao, pretende promover la implantación de estas instalaciones generando un modelo energético local que consiga atraer nuevos habitantes al concejo, incluso a iniciativas empresariales emprendedoras. Atiende a necesitades relacionadas con el reto demográfico por que favorece la fijación de población en esta localidad:

- Por la sensibilidad medioambiental que representa la puesta en marcha de esta instalación de autoconsumo que genera una imagen más atractiva de la localidad.
- Por la mejora de sus servicios o bienes dotacionales: la variación que puede generar en los presupuestos anuales, la reducción de los gastos de energía ofrece la posibilidad de aumentar otras partidas que mejoren la calidad de vida de las personas que residen en esta localidad y las que puedan llegar a residir en un futuro
- Por qué una imagen moderna e innovadora que puede ofrecer una localidad puede ser diferenciador, y un motivo para ser escogido como lugar de residencia, incluso como lugar de emprendimiento.

Por otro lado, en cuanto a las medidas normativas para favorecer este tipo de instalaciones fotovoltaicas cabe mencionar cual fue la participación del concejo de Dorrao en el proceso de toma de decisiones en cuanto este tipo de instalaciones de energía fotovoltaica en el ayuntamiento de Ergoiena.

El concejo de Dorrao pertenece al municipio de Ergoiena, y es al municipio a quien compete las cuestiones urbanísticas, y quien está gestionando el Nuevo Plan urbanístico Municipal de Ergoinena que actualmente se encuentra en una fase de aprobación inicial.

Para la aprobación inicial del Plan urbanístico municipal, el ayuntamiento recibió informes de cada una de las secciones del Gobierno del Navarra con indicaciones, de puntos a modificar para que este plan pudiera aprobarse finalmente, y desde la Sección de Urbanismo se remitió al ayuntamiento un informe comunicando al ayuntamiento lo siguiente:

"b) Aunque la ordenanza regula unas condiciones concretas que limitan la instalación de placas solares en las cubiertas de las edificaciones de los tres cascos urbanos residenciales, el Ayuntamiento debería valorar la conveniencia de no autorizar su instalación en las cubiertas por su repercusión desfavorable en las vistas lejanas de cada localidad y en el paisaje. En cualquier caso, la normativa aprobada la prohíbe en los edificios catalogados."

El concejo de Dorrao insto al ayuntamiento a que de ninguna manera siguiera lo indicado en el punto anteriormente mencionado. Además, solicito se favoreciera este tipo de instalaciones mediante la elaboración de un Ordenanza Reguladora de las instalaciones de energía solar, y en junio de 2023 el ayuntamiento publico la ordenanza reguladora donde ratifica la voluntad del ayuntamiento en impulsar este tipo instalaciones haciendo caso omiso a las indicaciones del informe de la sección de urbanismo del Gobierno de Navarra. Y Las ordenanzas dicen así:

"EXPOSICION DE MOTIVOS: Dada la antigüedad de la vigencia del Plan Municipal de Ergoiena, la normativa referente a las instalaciones de energía solar no se encuentra suficientemente establecida.

Por otra parte, desde la citada entrada en vigor, tanto la conciencia social como las distintas normativas de rango superior, inciden en la necesidad de impulsar estas tecnologías, y prueba de ello es la reciente aprobación de la Ley Foral 4/2022.

Por tanto, en sintonía con lo indicado, es voluntad política por parte del Ayuntamiento, comprometerse en la elaboración de una Ordenanza Municipal que, en la medida de su rango, impulse la eficiencia energética."

Dicha ordenanza está compuesta por medidas que abordan ampliamente dichas instalaciones y no suponen ningún problema para implantar este tipo de equipamientos, facilitando la implementación de este tipo de energía renovable en el municipio.

E) plan de formación al personal adscrito a las entidades en relación con el impulso en el municipio de las tipologías de actuación objeto de ayuda

El concejo no dispone de ningún trabajador asalariado, las personas implicadas en la supervisión, gestión, cuidado, mantenimiento de los equipamientos que forman parte del proyecto de autoconsumos son los cinco concejales que conforman la corporación concejil, los cuales recibieron una charla informativa por la empresa que realizo toda la instalación para que tuvieran las nociones necesarias para el buen uso y mantenimiento de las instalaciones.

Uno de los objetivos de la creación de la comunidad energética durante los procesos de participación es la capacitación de la población para la toma de decisiones, por ello se van a plantear varias sesiones formativas para ello.

El proceso formativo que pretende llevar el concejo de Dorrao va más allá del personal adscrito a la entidad, se pretende desarrollar un proceso formativo abierto a todos los habitantes y agentes que intervienen en la localidad para lograr el objetivo principal de la estrategia municipal en cuanto a energía, que es la creación de una comunidad energética local en el municipio de Dorrao.

El concejo de Dorrao ha ejecutado la primera fase de su plan estratégico, implantando el proyecto de autoconsumo de energía renovable, mediante la instalación fotovoltaica y almacenaje en los edificios de titularidad municipal. Además, esta fase ha sido complementada por varias actividades formativas dirigidas a la población local que se desarrollaron en 2023 para informar al a población de este tipo de energías renovables y sus beneficios.

Para la creación de la comunidad energética, se requiere de un proceso de participación y formación que se desarrollara durante este año 2025 y 2026. Todo este proceso se plantea a través de una dinámica participativa con el objetivo de poner en común y compartir información entre los habitantes de la localidad, el concejo y otras personas o agentes que faciliten y dinamicen estos procesos formativos, con información y experiencias de otros procesos participativos de estas característica.

Acciones de formación específica en temas energéticos. Durante las fases se realizarán varios talleres, en los que se dará apoyo a los usuarios a la hora de interpretar la factura eléctrica, así como información sobre las diferentes posibilidades de compra de energía
verde que existen en el mercado y las diferentes formas de ser más eficientes energéticamente.

De estos talleres también se obtendrán las siguientes acciones:

- consejos de ahorro personalizados
- creación de comunidad virtual que comparte consejos de ahorro y cultura energética
- evolución consumo y comparativas
- gráficos de distribución del consumo por cada hogar
- retos de ahorro
- “causa”: transformación del total ahorrado por la comunidad en inversión municipal en
- el proyecto de lucha contra la pobreza energética.

Se hará hincapié en el tema de la pobreza energética, entendiendo la comunidad como herramienta para poder abordar este problema desde la propia comunidad.

Para ello se deberán identificar las familias y personas afectadas por la pobreza energética, en colaboración con los servicios sociales del ayuntamiento.

- Visitas y asesoramiento personalizado a hogares afectados: formación sobre los bonos sociales de las compañías, reducción de facturas, identificación puntos de elevado consumo o consumos ocultos, etc..
- Plan de medidas sin inversión y ayudas para pequeñas inversiones para mejorar la calidad energética de los hogares: aislamientos, mejoras en la calefacción, etc

Otro de los aspectos formativos será la creación de redes de colaboración con centros formativos tanto del valle como de la Comunidad Foral.

Mediante la Red de Escuelas Rurales de Sakana, se realizarán visitas de conocimiento a las instalaciones para la difusión pedagógica del modelo energético y la sensibilización medioambiental de la población escolar.

El centro de formación CENIFER, a través de su centro de formación ocupacional y profesional, ofrece cursos sobre energía solar. Los alumnos podrán hacer hacen la reparación/mantenimiento de instalaciones de energía solar municipales.

Por último, mencionar que todos los encuentros participativos para la creación de la comunidad energética, tendrán un carácter formativo, ya que en todas se trabajan nuevos contenidos y comparten el objetivo de capacitar a los asistentes para la toma de decisiones y desarrollo del proyecto.

MEDIDAS FORMATIVAS EJECUTADAS Y PREVISTAS EN EL CONCEJO DE DORRAO

MEDIDA FORMATIVA	ACCIONES FORMATIVAS	CRONOLOGIA	ESTADO DE EJECUCION
FASE 1 DEL PLAN ESTRATEGICO			
FORMACION CORPORACION CONCEJIL	Charla informativa ofrecida por la empresa Tkin a la corporación concejil para la adquisición de nociones básicas para la gestión y mantenimiento necesario de las instalaciones, para un bien uso de estas.	Noviembre de 2023	EJECUTADO
CHARLA INFORMATIVA	Charla informativa para dar a conocer las instalaciones fotovoltaicas, sus componentes, los diferentes tipos, proceso de montaje, mantenimiento, así como los costes involucrados y las subvenciones existentes.	Diciembre de 2023	EJECUTADO
EDICION DOCUMENTO INFORMATIVO	La edición de un documento con toda la información compartida en la charla informativa que se repartió en todas las viviendas de la localidad.	Diciembre de 2023	EJECUTADO
FASE 2 DEL PLAN ESTRATEGICO			
PROCESO INFORMATIVO SOBRE EL CONSUMO DE ENERGIA Y AUTOCONSUMO FOTOVOLTAICO	Charla formativa para aprender a interpretar la factura eléctrica, así como información sobre las diferentes posibilidades de compra de energía verde que existen en el mercado y las diferentes formas de ser más eficientes energéticamente. En	Previsto para mayo 2025	EN PROCESO DE EJECUCION

	esta charla se ofrecerá también información acerca de la energía renovable fotovoltaica: sus componentes, los diferentes tipos, proceso de montaje, mantenimiento, así como los costes involucrados y las subvenciones existentes.		
PROCESO INFORMATIVO SOBRE COMUNIDADES ENERGETICAS	Charla informativa sobre las comunicades energéticas. Ejemplos de otras localidades.	Previsto para mayo 2025	EN PROCESO DE EJECUCION
CREACION DE REDES DE COLABORACIÓN	Creación de redes de colaboración con centros formativos tanto del valle como de la Comunidad Foral y,l otros agentes para que participen en el proceso de formación.	Previsto para el cuarto trimestre de 2025.	
PROCESO PARTICIPATIVO Y FORMATIVO SOBRE COMUNIDADES ENERGETICAS	Proceso participativo para definir las funciones, objetivos y forma de gestión de la Comunidad Energética. Diseñar la hoja de ruta y desarrollar el calendario de participación. Designar al grupo motor para dinamizar todo el proceso. Generar alianzas con otras entidades para tener asesoramiento, Y buscar líneas de financiación	Previsto para el cuarto trimestre de 2025 y 2026	EN PROCESO DE EJECUCION
FASE 3 DEL PLAN ESTRATEGICO			
FORMACION PARA LA PUESTA EN MARCHA DE LA COMUNIDAD ENERGETICA DE DORRAO	Acciones formativas para la constitución jurídica de la comunidad energética Acciones formativas para la implementación de energías compartidas y puesta en marcha del proyecto.	Previsto para el 2026-2027	SIN EJECUTAR

ADJUNTOS

Documentación paneles fotovoltaicos

2019
2020

Trinasolar

Corporate Social Responsibility Report

Range and Scope of the Report

As the world's leading provider of photovoltaic smart energy solutions, Trina Solar has always prided itself on its diligence in fulfilling its corporate social responsibility. Since 2011 it has continuously prepared and published annual corporate social responsibility reports disclosing Trina Solar's strategy, practice and performance in corporate social responsibility. The last report was published in August 2019.

The reporting period is from January 1, 2019 to December 31, 2020, covering the global factories and operational business units in which Trina Solar has direct operational control. The report contains information on economics, environment, supply chain, employees and the community, and reports on Trina Solar's management methods, activities, initiatives and key indicators in corporate social responsibility and sustainable development in 2019 and 2020. Our annual corporate social responsibility report is dedicated to providing information to stakeholders, i.e. shareholders, potential investors, customers, employees, business partners, public welfare organizations, media and the government to help them understand and assess Trina Solar's influences, risks and opportunities in sustainable development.

At the 11th International Symposium on Corporate Social Responsibility in China in 2018, Trina Solar's Corporate Social Responsibility Report 2017 won the GoldenBee Excellent CSR Report 2018 – Growing Enterprise Award. In 2017 and 2018, Trina Solar won the Gold Award for Global Corporate Social Responsibility Achievement from EcoVadis. In December 2020, Trina Solar won the People's Corporate Social Responsibility Green Development Award organized by People's Daily and sponsored by people.cn.

Reporting Framework

This report is prepared with reference to GRI Sustainability Reporting Standards 2018 (GRI Standards) issued by the Global Sustainability Standards Board (GSSB), and discloses relevant information related to the full compliance program, also in compliance with Guidelines on Environmental Information Disclosure for Listed Companies as required by the Shanghai Stock Exchange, mainly including six parts: corporate governance, technology leadership, caring for the Earth, caring for employees, contributing to society and responding to COVID-19.

Data Source

The data in this report is mainly from the original records of the company's operations. The information has been reviewed internally by the company and approved by management, and certain contents have been reviewed externally. We will regularly verify the effectiveness of the data collection process and data management system. Trina Solar passed the ISO 14001 certification of environmental management system in 2008, the OHSAS 18001 certification (now: ISO 45001) certification of occupational health and safety management system in 2010, the ISO 14064 verification of the quantitative system of greenhouse gas emissions and elimination at the organizational level in 2011 and began the PAS 2050 certification of product carbon footprint in 2012. It also passed the ISO 50001 certification of energy management system in 2015. We verify the effectiveness of these systems through annual external audits.

Designation

For ease of expression and reading, Trina Solar CO., Ltd in this report is also referred to as Trina Solar, the company, the group or "we".

Currencies

Unless otherwise specified, any monetary amount cited in the report is in RMB.

Report Access

The electronic version of this corporate social responsibility report is available on Trina Solar's website (http://www.trinasolar.com).

If you have any questions, suggestions or comments on it, please send an email to CSR@trinasolar.com.

Company Profile

Company name	Trina Solar Co., Ltd
Headquarters	Changzhou, Jiangsu, China
Establishment	December 1997
Chairman	Gao Jifan
Listed exchange	Shanghai Stock Exchange
Code of A share	688599
Abbreviation of A share	Trina Solar

Financial Performance

Operating income (million RMB)

2019
23,322
2020
29,418

Net profit attributable to parent (million RMB)

2019
641
2020
1,229

Basic earnings per share (RMB/share)

2019
0.36
2020
0.64

Weighted average return on equity (%)

2019
5.53
2020
8.94

Environmental Performance

Global clean energy *generation (million kWh)

2019
695
2020
1,117

Material environmental breach (times)

2019
0
2020
0

GHG emissions per unit output (tCO_2e/MW)

2019
98.57
2020
57.42

Power consumption per MW module (MWh/MW)

2019
123
2020
89

Energy consumption per 10,000 RMB output value (tce/10,000 RMB)

2019
0.0594
2020
0.0607

Social Performance

Number of employees (p)

2019
12,743
2020
14,130

Employee training (h)

2019
7,498
2020
21,535

*Note: In December 2020, 99.9% Trina Solar's power generation of PV power plants is from China. With the commissioning of newly installed PV power plant in overseas in 2020, Trina Solar's clean energy power generation is expected to rise rapidly in the coming year.

Dear stakeholders:

2020 was a challenging year for Trina Solar. With the outbreak of COVID-19, all localities urgently entered a state of pandemic control, and the rapidly spreading pandemic took a heavy toll on the global economy, the new-energy industry being no exception. The company responded quickly and methodically to ensure production and other operations could continue with as little disruption as possible.

In any event, 2020 turned out to be extremely fruitful for Trina Solar. It managed to accelerate its global distribution, increase investment in scientific research, strengthen its care for its employees and reinforce its team building. Indeed growth in its business ran strongly counter to the prevailing trend. On June 10, 2020, Trina Solar became the first Chinese PV product, PV system and smart energy company to trade on the Shanghai Stock Exchange Science and Technology Innovation Board, and started a new stage of rapid development.

Goal 3060 for emission peak and carbon neutrality has brought new development opportunities to Trina Solar. Adhering to the initial dream of "Solar energy for all", Trina Solar will insist on a positive and steady development strategy, assume more social responsibilities as a corporate citizen, care for employees and the Earth, work closely with partners and stakeholders for mutually beneficial results and jointly contribute more to low-carbon, green and sustainable development.

Corporate Governance In abiding by the core values of "focusing on the customer, persisting in open innovation, persevering through dedication and hard work, excellence,sharing the responsibility, creating and sharing value together", Trina Solar has continuously improved the level of corporate governance and made important progress in various businesses.

With outstanding innovation capability and high standards of corporate governance, Trina Solar ranked fifth among the Top 100 Innovative Enterprises in Jiangsu Province and second among the Top 100 Innovative Private Enterprises in Jiangsu Province in 2020. It passed the review for its leadership in manufacturing by the Ministry of Industry and Information Technology, and was selected as one of the top 20 companies in the STAR Market and the top 10 high-end equipment enterprises in the STAR Market, being the only photovoltaic company on the list. The company's shares were included in the STAR 50 Index, making the company the only photovoltaic company selected.

Technological leadership From 2019 to 2020, Trina Solar's three major sectors of business continued to grow and innovate, and its operational performance was outstanding. The company promoted the application of Vertex ultra-high-power modules, leading China's photovoltaic industry to upgrade to a new era of 600W+. The company plans to establish production and manufacturing plants in Suqian, Yancheng, Yiwu, Changzhou and elsewhere. A number of production capacity projects have been started and brought into production. Trina Solar has obtained more than 10GW orders of 210mm Vertex series modules, widely acclaimed on the market. In 2020, the company took the lead in launching the 600W+ Photovoltaic Open Innovation Ecological Alliance,which includes upstream and downstream companies and institutions in the industrial chain, and worked with the industry to move toward a new era of 210mm ultra-high-power modules.

Trina Solar has continuously increased its investment and insisted on being innovation-driven to promote corporate governance and progress with product technology. In 2020, the company invested more than 1.63 billion RMB in R&D with 22.3% YoY increase, of which R&D expenses were 363.48 million RMB with 23.73% YoY increase. In 2020, the company was recognized as a National Model Enterprise for Technological Innovation by the Ministry of Industry and Information Technology, another national qualification obtained following those of The State Key Laboratory of PV Science and Technology, National Enterprise Technology Centre and National Intellectual Property Demonstration Enterprise.

Caring for the Earth Trina Solar, as the world's leading provider of photovoltaic smart energy solutions, adheres to the concept of green development and protects green hills and clear waters with high-quality, efficient and low-carbon products.

By the end of 2020, the company's module production capacity was about 22GW, and the tracker business shipped 2GW. These products were sold to more than 100 countries and regions, contributing to reducing emissions and protecting the Earth. In the PV power system, the company has won nearly 1GW photovoltaic bidding and parity project PV power plant construction indicators in China. We also signed a foreign project contract with Rise Fund, a global impact investing fund managed by TPG, with a transaction amount of about $700 million, including 35 overseas photovoltaic power plant projects in Europe and Latin America, with a total size of nearly 1GW. These PV power plants generate clean and green electricity to reduce greenhouse gas emissions and promote clean energy substitution.

Trina Solar has established a sound quality management system (ISO 9001), environmental management system (ISO 14001), energy management system (ISO 50001) and quantification and reporting of greenhouse gas emissions (ISO 14064) to systematically control the quality, environment and energy risks that may occur in the production and operation process to meet customers' requirements for product quality and environmental protection. The company has pledged to implement the Product Stewardship Policy and implement product quality and environmental protection at every stage of its product life cycle.

In 2020, Trina Solar obtained the EPD: Environmental Protection Declaration in respect of three series of module products issued by UL of the United States and EPD of Italy, and protected our employees, customers and community in a responsible manner. On December 12, 2020, Trina Solar won the Green Development Award for its outstanding contribution to sustainable development at the People's Corporate Social Responsibility Summit Forum and the 15th People's Corporate Social Responsibility Award Ceremony organized by People's Daily and sponsored by people.cn.

Caring for Employees To better cope with fierce market competition and provide an excellent atmosphere for all employees, at the end of 2019, the company began to promote a culture of striving, building this into a system that encourages excellence in 2020. By being goal-oriented, stimulating organizational vitality and cultivating those who strive, the company aims to promote a healthy and happy work environment, advocating the philosophies of self-cultivation, family harmony, enterprise development and global benefits, and strives to create an atmosphere in which employees are positive, remain abreast of the times and respect and trust one another.

In 2020, Trina Solar continued to establish and improve long-term incentives and restraint mechanism by formulating a restricted stock incentive plan. The company provided professional training and education and a performance-based salary system for employees, giving comprehensive and robust protection to employees' rights and interests. The company has established a leading occupational health and safety management system (ISO 45001), paid social insurance and housing accumulation fund for employees in accordance with the law, and provided employees with supplementary combined commercial insurance covering supplementary medical treatment, accidental injury, serious illness and term life insurance (some of which covers employees' families), providing employees and their families with supplementary safety protection.

The company organized a variety of recreational activities, support to help employees in difficulty, and services to empower employees' physical and mental health, so as to enhance employees' sense of belonging and happiness, and create a good working atmosphere of combining work with rest and physical and mental health.

Contributing to Society Trina Solar is keenly aware of its social responsibility as an excellent corporate citizen in all its activities, benefiting the people and giving back to the society in various forms.

Trina Solar responded strongly to the national call for a rural revitalization and photovoltaic poverty alleviation policy, and carried out photovoltaic poverty alleviation work in Gansu, Hebei, Sichuan and other regions. Combined with local industrial characteristics and resource advantages, it selected poor areas with photovoltaic construction conditions to carry out photovoltaic poverty alleviation projects. For example, the 100 MW poverty alleviation power plant in Wuwei, Gansu province, benefited 800 poor households in Dongxiang county in the first phase and 3,200 poor households in 13 counties and cities in the second phase. By the end of December 2020, 6 million RMB of poverty alleviation funds were paid in the first phase and 14.4 million RMB in the second phase.

In 2020, Trina Solar also applied to China Siyuan Engineering Foundation for Poverty Alleviation for 700,000 RMB to build village-level photovoltaic power plants in the villages of Gaozhazi and Heiniushan in Fengning county, Hebei province. After completion, the collective economic income of the village is forecast to rise by more than 10,000 RMB per year. At the same time, this fund has also been used to build household photovoltaic capacity in more than 40 poor families in the town of Heishanzui town and the township of Tanghe in Fengning county, producing a rise in household annual income of 1,800 RMB.

Responding to COVID-19 After the outbreak of COVID-19 at the beginning of 2020, the company took advantage of globalization and mobilized global resources to buy anti-pandemic materials and donated them to Jiangsu Medical Team in Wuhan, Huashan Hospital of Fudan University Medical Team in Wuhan, Fifth People's Hospital Medical Team in Wuhan, and designated hospitals for treatment of COVID-19 in Nanjing, Changzhou, Yancheng and Suqian through the Jiangsu Charity Federation. As the pandemic spread, the company donated masks and other medical materials to Spain, Japan and the Maldives.

Looking ahead, green transformation has become a global consensus. Carbon peak and carbon neutrality opens the ceiling of the photovoltaic industry, and the construction of a new power system with new energy as the main body is in full swing. We believe that an era of high growth in new energy is upon us, a beautiful picture of tomorrow beginning to unfold before our very eyes. Opportunity lies in grasping, happiness comes from struggle, and responsibility lies in implementation. Trina Solar will remain steadfast in completing its mission, demanding the highest standards of itself, fulfilling its role with a greater sense of responsibility and conscience, and always giving back to society. We look forward to working more closely than ever with all stakeholders, embrace the era of carbon peak and carbon neutrality, blaze new trails, forge ahead, and continue to strive for a greener and more environmentally friendly carbon-free new-energy world.

Gao Jifan

Chairman and CEO, Trina Solar

> "We strive to become the leader of the global energy Internet of Things, actively integrate into the tide of carbon neutrality and contribute to the construction of a carbon-free new energy world."

About Trina Solar

About Trina Solar

Trina Solar CO., Ltd was founded in 1997. Its headquarters is in Changzhou, China and its main business focuses on photovoltaic products, photovoltaic systems and smart energy. The company engages in PV products R&D, manufacturing and sales; PV projects development, EPC, O&M; smart micro-grid and multi-energy complementary systems development and sales, as well as energy cloud-platform operation. On June 2020, Trina Solar issued the first A-Shares on Shanghai Sci-Tech Innovation Board, becoming the first PV product, PV system and smart energy company listed on the Shanghai Stock Exchange Science and Technology Innovation Board, also known as the STAR MARKET.

Trina Solar has always adhered to the six strategies of Innovation, Branding, Globalization, Platformization, Intellectualization and Industry-Finance Synergy, leading development in terms of innovation level, economic benefits, product quality and environmental safety. With its outstanding technological innovation capability and leading globalization level, it has accumulated excellent brand reputation and public praise, and won numerous domestic and international awards.

United Nations BlueSky Award for Leading Technology

World's Most Bankable Module Brand

Boston Consulting Group Global Tech Challenger Top 100

World IoT Convention Top 500

China Industry Award

Global New Energy Company Top 500

China's Manufacturing Industry Top 500

China's Private Company Top 500

Hurun China Top 500

Milestones

1997

Trina Solar was founded in 1997 when the Chairman, Mr. Jifan Gao, took inspiration from the Kyoto Protocol and the U.S. Million Solar Roofs Initiative.

1999

Completes China's first solar PV building, the "Sun Hut", featured in promotional video for Beijing Olympics bid.

2003

Trina Solar participates in the Light Project helping to build 40 PV plants in western China.

2006

Lists on NYSE.

2008

Builds Trina PV industrial park.

2010

Becomes first "solar industry shaper" at Davos World Economic Forum.

2012

State Key Laboratory of PV Science & Technology is established in Changzhou headquarters.

2014

Gao Jifan becomes the first President of the China photov oltaic Industry Association.

2015

Gao Jifan serves as Co-Chairman of GSC.

2017

Trina Solar launches the Millions of PV Roofs Plan and unveils China's first residential PV brand-Trina Home.

Gao Jifan is elected Vice-President of the National Energy Internet Industry and Technology Innovation Alliance.

2018

Launches Energy IoT brand-TrinaIoT.

Wins the China Industry Adards, the first PV company to receive the honor.

2019

Recognized as National Center for Enterprise Technology by the five ministries and commissions.

2020

Trades on the SSE STAR market.

Launches Vertex 600W+ ultra-high power modules, leading the global PV industry into the era of solar 6.0.

Trina Solar's Three Major Business Sectors

1 Photovoltaic products

The world's first-class manufacturer of photovoltaic modules.

Vertex 210mm Ultra-High Power Modules:

Trina Solar Vertex modules use 210mm cells, featuring high power, high efficiency, high reliability and high energy yield. Since the beginning of 2020, Trina Solar has launched 405W+, 500W+, 550W+, 600W+ and 670W Vertex 210mm ultra-high power modules on the market, these being suitable in all settings from residential rooftops, commercial and industrial rooftops to large-scale power plants. Whether in terms of supply chain at the manufacturing end, inverter or tracker compatibility at the system end or customer value such as balance of system (BOS) cost and levelized cost of energy (LCOE), Trina Vertex ultra-high power modules have important advantages: non-destructive cutting + high-density interconnection technology + multi-busbar (MBB) technology, acheiving efficient and reliable features; low voltage, high string power design; significant value of module products and greatly reduced BOS costs, thus bringing more customer value. At present, 600W+ ultra-high power modules have mature technical conditions and are accepted by the industry.

TrinaTracker

TrinaTracker is Trina Solar's tracker business brand. TrinaTracker products have four core advantages:. high reliability, low operation and maintenance costs, multiple power generation and unified module tracker channels, and they are core components of Trina Solar's overall smart energy solution. Global photovoltaic power generation is moving toward the last stretch of parity. TrinaTracker perfectly matches the mainstream 210mm ultra-high power modules, which can greatly increase energy yield, reduce levelized cost of energy (LCOE) and increase PV power plant ROI (return of investment). As this report has being prepared, TrinaTracker's global installed capacity and shipped volume was 6GW, and annual production capacity is expected to reach 8GW in 2021.

High reliability

More yield gain

Low operation and maintenance cos

Easier overall solution

2 Photovoltaic system

The world's leading provider of overall solar solution.

Project development of photovoltaic power plant

The business system, which focuses on core products such as photovoltaic modules and batteries, deepens the expansion of the overall solution of the entire photovoltaic system and provides better service for end users. Over the last two decades, Trina Solar has emerged as a top-tier project developer worldwide, fostering reliable and long-term partnerships. Our downstream project development business segment provides utility and C&I project total solutions and services including project development, design, financing, EPC management and O&M. As of December 2020:

- Connected projects worldwide: 5 GW+
- Global pipline: 7 GW+

Smart distributed energy solution

With the mission of "solar energy for all", Trina Solar insists on making photovoltaic enter thousands of households through innovation. It was thus that Trina's smart distributed energy was born. This is a business of Trina Sola that focuses on providing small and medium-sized distributed photovoltaic power generation for end users. Around the three core strategies, i.e. brand, product and service, the company has established a complete system integrating product research and development, market and sales, installation and after-sales, and intelligent operation and maintenance. It has built a digital and omni-channel ecological network and is committed to providing the best clean energy experience for end users.

- Cumulative system shipments in four years: 2 GW+

3 Smart energy

Intelligent energy storage solution

Trina Storage, a business unit of Trina Solar, is a global provider of energy storage integrated products and system solutions under Trina Solar. Taking technological innovation as the driving force for development, relying on leading independent innovation capability and rich experience in R&D, it provides customers with a complete system solution throughout the lifecycle which includes demand analysis, project design, system integration, commissioning and delivery, as well as providing the customers with highly-efficient and reliable energy storage system products and services.

Energy storage applications

- New energy side energy storage solution: for large-scale photovoltaic power plants and wind farms
- Grid-side energy storage solution: for grid-side and grid-friendly
- User-side energy storage solution: for industrial and commercial premises
- Microgrid energy storage solution: for no-power areas and islands

Energy storage industry chain

- Lithium iron phosphate battery production line (planned annual production capacity of 10GWh)
- Energy storage module production line (planned annual production capacity of 10GWh)
- Energy storage container system integration line (planned annual capacity of 2GWh)
- Supporting BMS/EMS/PCS

Energy Internet of Things (IoT)

In 2018, Trina Solar took the lead in releasing the Trina energy IoT "TrinaIoT" brand, with the mission of helping enterprises realize digital operation and improve management efficiency. The self-developed PaaS platform and various SaaS applications are combined flexibly and modularly to provide integrated energy management systems and energy+IoT solutions for customers in different fields, and are committed to becoming a first-class overall solution service provider for intelligent IoT application.

Globalization

Trina Solar has regional headquarters in Switzerland, United States, Japan, Singapore and United Arab Emirates. It has also set up offices and branches in Germany, Spain, Italy, Mexico, Brazil, South Africa, Australia, South Korea, India etc.. It has also set up production and manufacturing bases in Thailand and Vietnam, with operations in more than 100 countries and regions. We are committed to working with installers, distributors, utilities and project developers worldwide to build a sustainable solar energy industry, constantly leading the industry in technological innovation, product quality, environmental protection and corporate social responsibility, bringing clean and reliable solar clean energy to households and to commercial and large public facilities.

Global regional headquarters

- Changzhou, China
- Miami, US
- Fremont, US
- Dubai, United Arab Emirates
- Zurich, Switzerland
- Tokyo, Japan
- Singapore

Global manufacturing bases

- Changzhou, China
- Suqian, China
- Yancheng, China
- Yiwu, China
- Vietnam
- Thailand

Global sales and operations organizations

- Beijing, China
- Shanghai, China
- Changzhou, China
- Brazil
- Britain
- Chile
- Germany
- India
- Mexico
- South Africa
- South Korea
- Spain
- Turkey
- United Arab Emirates

Milestones in 2019 and 2020

- On January 2, 2019, Trina Solar was recognized as a National Enterprise Technology Center by the National Development and Reform Commission and another five ministries and commissions, and was rated as excellent in the first performance evaluation.
- On June 10, 2020, Trina Solar entered the STAR Market of the Shanghai Stock Exchange, becoming the first company engaged in photovoltaic products, photovoltaic systems and smart energy listed on the STAR Market.
- In 2020, Trina Solar launched new generation products of Vertex 600W+ ultra-high-power modules, leading the global photovoltaic industry into the solar 6.0 era.

Important Awards in 2019 and 2020

- On May 18, 2019, Trina Solar was awarded second place in the top 100 innovative enterprises in Jiangsu province in 2018.
- On July 22, 2020, Trina Solar was selected as one of the top 20 companies in the STAR Market.
- On August 20, 2020, Trina Solar was awarded Bloomberg's World's Top Bankable Module Supplier for 5 consecutive years. On September 10, 2020, Trina Solar was once again selected as one of the Top 500 private companies in China (ranked 422) and as one of the Top 500 manufacturing companies in China (ranked 245).
- On November 25, 2020, Trina Solar was selected as one of Hurun's top 500 private companies in China (ranked 318).
- On November 27, 2020, Trina Solar was selected as one of the Top 500 Global New Energy Enterprises in 2020 (ranked 42).
- On December 3, 2020, Trina Solar was recognized as a National Technological Innovation Demonstration Enterprise.
- On December 20, 2020, Trina Solar was included in the top 500 Internet of Things rankings (ranked 238).

Corporate Culture

Core Values

Trina Solar, with a vision of "creating a carbon-free new energy world" and with the mission of"solar energy for all", has formulated brand-new core values for the company in the 3.0 era: namely focus on the customer (C), persist in open innovation (O), persevere through dedication and hard work (D), excellence (E), share the responsibility create and share value together (S), which gives us CODES, constituting the code of conduct for every Trina Solar employee and the key to success for Trina Solar's sustainable development and future.

From 2019 to 2020, we thoroughly reassessed our values to help employees understand the advantages and improvements of their cultural core values in practice, and to formulate personal cultural promotion plans to promote employees' continuous improvement. We continue to carry out "Looking for Trina Star" project to encourage employees to find excellent employees around, so as to internalize Trina 3.0 core values and present them in practice.

- Focus on the Customer
- Persist in Open Innovation
- Persevere through Dedication and Hard work
- Strive for Excellence
- Share the Responsibility, Create and Share Value Together

Communication of corporate culture

To integrate the core values of CODES into every Trina employee's daily behavior, and transform them from words to actions, we do various things every year to ensure that core values are rooted in all aspects of our business, to ensure that we maintain unified thoughts and actions in our daily operations, and to provide effective services to our customers in a consistent way.

The WeCome Platform of "Trina Culture"

Trina Culture disseminates company news and publishes office guides and notices on online activities, mobile learning, employee recognition, internal communication and other activities in real time. Employees can thus conveniently find out about company developments and engage in corporate cultural.

Stakeholder Communications

Trina Solar is committed to fulfilling its environmental and social responsibilities, creating a better photovoltaic market environment and transmitting the vision and practice of sustainable values we uphold to the group's partners and all stakeholders. To better plan and put into practice the group's sustainable development strategy, we promote two-way, transparent and regular communication so as to help us establish close ties with stakeholders, ensure the key sustainable issues concerned by all stakeholders are associated with economic benefits and operations and production, and strengthen mutual trust and respect between Trina Solar and all stakeholders.

We have adopted the guiding principles of GRI on corporate social responsibility governance, and built the principle basis for our stakeholder communication and participation. We have established stable and targeted communications channels by identifying stakeholders and systematically classifying management, such as in product launches, face-to-face communication meetings, questionnaires, CSR e-mail, the official website and various activities to reflect and carry out the expectations of stakeholders and to fulfill their needs and consider their suggestions, and select the best as an important input for our improvement while responding effectively to all we face.

Trina Solar is committed to providing sustainable solutions to global climate change and the energy crisis. It promotes sustainable economic development by working with others worldwide, including government agencies, photovoltaic associations and other stakeholders.

Trina Solar was invited to attend the 2019 B20 Summit in Japan

This summit has always been an important supporting activity of the G20 summit and serves as an important platform for international business leaders to have a role in global economic governance and formulating international economic and trade rules. Trina Solar has taken part in several summits, in China, Argentina, Germany and Turkey, and has taken part in G20 and B20 related dialogue and consultation. It has also issued a proposal to G20 leaders on behalf of the Global Solar Council, calling on countries to give appropriate attention and support to the development of the solar photovoltaic industry. On March 14-15, 2019, the G20 Business Summit was held in Tokyo. It focused on sustainable development and the new concept of Social 5.0, and those who attended discussed issues such as the state of the world economy, trade and investment, and digitalization. Trina Solar attended this event, representing Chinese companies.

As the world's leading photovoltaic company, Trina Solar, while advocating clean energy and promoting photovoltaic applications, also strives to convey the philosophies of innovation, inclusiveness, openness and symbiosis. Trina Solar's business covers more than 100 countries and regions, creating employment for locals and enabling them to enjoy the fruits of solar energy technology innovation.

Trina Solar will continue to regard innovation as its driving force, develop clean energy and energy IoT, regard promoting sustainable development as its responsibility, and explore markets in G20 countries.

Trina Solar represented at Boao Forum

From March 26 to 29, 2019, Gao Jifan, Chairman and CEO of Trina Solar CO., Ltd , attended the Boao Forum for Asia Annual Conference. The group was again determined to demonstrate its commitment to drive development with innovation, accelerate the pace of energy transformation and use solar energy to benefit all mankind.

In sub-forums and discussion groups such as those titled "Energy Resources Leaders Roundtable", "Changing Energy Industry", "China-Japan CEO Dialogue" and "China-ASEAN Provincial Governors and Mayors Dialogue", Gao Jifan said that the installed capacity of solar photovoltaic rose 104 GW in the world in 2018, and photovoltaic became the largest newly installed power in the world. In some countries, the price of photovoltaic power generation was close to or even lower than that of thermal power. According to a forecast of the International Renewable Energy Agency, the proportion of photovoltaic power generation would rise from 3% to more than 30% by 2050. The reconstruction of energy has begun, and the new energy era with solar photovoltaic as the main driving force has come. Having become a pacesetter, China's photovoltaic industry will contribute more Chinese wisdom and Chinese solutions to the global low-carbon transformation with greater responsibility.

In the future, energy will build a sharing mechanism based on data sharing and intelligent interconnection to form a new energy system as part of energy marketization and the sharing economy. This new system is characterized by clean, low carbon, safety, autonomy and low costs. Eventually, photovoltaic will bring about the integration of solar energy, energy storage and hydrogen energy based on digital and intelligent technologies.

Stakeholders	Communication Methods	Communication Activities
Customer	• Product launch • Customer satisfaction survey • Customer audit • Meeting, exhibition and expo • Website	• In 2019, Trina Solar Vision and Innovation Exhibition Center was opened for visitors, presenting Trina Solar's historical development, R&D and innovation, products, business strategic, manufacturing, corporate culture and prospects to customers. • In 2019-2020, Trina Solar displayed leading products and business, including Vertex 210mm series ultra-high power modules, TrinaPro and Trina Energy Storage to global customers on SNEC. Since 2014, the center has worked with independent third-party organizations to conduct independent global customer satisfaction surveys. According to surveys over the years, Trina Solar has been in a leading position in the competition ranking, especially in terms of customer referrals. • In 2019 and 2020, the company specially set up projects to improve customer satisfaction, made targeted improvements on matters with high customer attention, set up a new customer service portal and mobile service platform, and set up a number of convenient service functions to improve customer feedback efficiency.
Employee	• Communication meeting • Roundtable and lunch meeting • HR hotline • Mailbox for rationalizing suggestions • WeChat platform • Employee training	• Trina Solar holds employee meetings yearly. Thousands of people, including executives, manufacturing employees and overseas employees are invited to gather and take part in the meeting online and offline. • In 2019 and 2020, more than 10 kinds of diversified cultural and sports activities were organized, and there were hundreds of diversified cultural and sports activities each year, including interest activities, traditional culture activities, reading activities and traditional festivals, including: Women's Day, Youth Day, Mother's Day, Children's Day, Father's Day, Dragon Boat Festival, Mid-Autumn Festival, National Day, Christmas and other holiday-type online and offline activities. • DL & IDL Spring Festival Retention Program. • Regular library activities, yoga classes, moxibustion classes, summer camp activities for employees' children, art study classes, reading sharing activities, etc. • Clubs: badminton, football, table tennis, basketball clubs (regular activities). • Tours available to outstanding employees. • Labor union matchmaking activities. • Regular new employee communication meetings and team building activities in various departments. • Various types of skills training, management training, etc.

Stakeholders	Communication Methods	Communication Activities
Shareholders and investors	• General meeting of shareholders • Roadshow and reverse roadshow • Performance briefing • Field investigation • Hotline	• The company held physical and sometimes online shareholders' meetings, making it easier for investors to attend. • The company disclosed its annual report each year and timely disclosed its operating conditions and industry development. • The company held regular annual and semi-annual performance briefing meetings to communicate with investors about the company's operating performance. • The company carried out roadshows and reverse roadshows from time to time, strengthened exchanges with investors and issued information on the company's operations and growth. • The company maintained smooth communications channels with shareholders of the company, especially small and medium shareholders, through various forms such as hotline, email and field investigation.
Government	• Sign cooperation memorandum • Participate in policy research • Participate in government's project	• On August 14, 2019, Zhang Shaoqin, Standing Committee member of the National People's Congress and Vice Chairman of the Central Committee of the Democratic National Construction Association, led a team that inspected Trina Solar's Changzhou headquarters. • On June 19, 2020, Lou Qinjian, Secretary of Jiangsu Provincial Party Committee, Wu Zhenglong, Governor of Jiangsu province, Hu Heping, then Secretary of Shaanxi Provincial Party Committee, and Liu Guozhong, then Governor of Shaanxi province, led party and government delegations from Jiangsu and Shaanxi provinces to investigate Trina Solar's Changzhou headquarters. • On August 5, 2020, Huang Lixin, Chairman of Jiangsu Provincial Political Consultative Conference, and his delegation visited Trina Solar's Changzhou headquarters.
Business partners	• Sign strategic partnership agreement • Supplier meeting • Supplier research/audit • Supplier/contractor training	• In July 2020, Trina Solar took the lead in establishing the 600W+ Photovoltaic Open Innovation Ecological Alliance with 39 leading companies in the upstream and downstream of the industrial chain, and as this report was being prepared, there were 75 companies, promoting collaborative innovation in the industrial chain and building a healthy ecosystem for the development of the industry.
Non-governmental organizations and community	• Participate in community activities • Employee volunteer activities • Participate in charity activities • Collect feedback from community • Hire local employees to improve profits and pay tax in accordance with law	• In November 2020, Trina Solar donated 100kW photovoltaic power generation systems to Sitagu Ayudana Hospital, Myanmar, which alleviated its power shortage and cut its energy costs so it could invest in more medical projects and provide high-quality medical services for local residents. • In July 2019, Trina Solar took part in public welfare activities of World on Wheels in India, renovated a bus roof by installing solar modules to supply power to PC computers in the bus, and popularized computer knowledge for children in remote rural areas of India. • In May 2019 a 6kW household photovoltaic system was donated to an Australian children's hospital.

Stakeholders	Communication Methods	Communication Activities
Public media	• Timely/regular disclosure of corporate social responsibility information • Periodic reports and temporary material announcements of the company	• The company communicated its developments, product technical information, corporate social responsibilities and philosophies to customers worldwide initially through the official website, WeChat, LinkedIn, Facebook, Twitter and other social media platforms, and maintained real-time interaction with customers through these platforms. The company regularly disclosed information such as annual • reports and semi-annual reports, and disclosed temporary announcements such as material contracts and major investments in accordance with the regulatory requirements of listed companies, and publicized them through financial media, etc.
Research institutions/ standards associations	• Industry associations • Seminars • Technical collaboration	• The SEMI international standard Test Method for Cell Defects in Crystalline Silicon PV Modules by Electroluminescence (EL) Imaging (standard number: SEMI PV94-0420) led by Trina Solar was issued in April 2020. It is being implemented globally as a unified technical specification. • The national standards Acceptance Code for Photovoltaic and Building Integrated Power Generation System (standard No. GB/T 37655-2019) and Solar Photovoltaic Rubber Module (standard No. GB/T 38391-2019) formulated by Trina Solar were issued in June 2019 and December 2019 respectively. After the two standards were issued, they were being implemented nationwide as unified technical specifications.

Customer service

Customer satisfaction and user experience are the utmost concern to Trina Solar Group, and its cultural values also put customers first. Over the past two years the company specially set up projects to improve customer satisfaction, made targeted improvements on matters that preoccupy many customers, set up a new customer service portal and mobile service platform, as well as a number of convenient service functions to improve the efficiency of customer feedback. Internally, the company also set up a product information management system to optimize packaging and improve product quality, effectively supporting the delivery of high-quality products and services.

Since 2014, Trina Solar has worked with independent third-party organizations to conduct independent global customer satisfaction surveys. According to the surveys over the years, Trina Solar has been a leader in competition rankings, especially in terms of customer referral rate. The company has signed an information confidentiality agreement with a third party. Independent links and optional anonymity are adopted in the investigation process to ensure the independence and confidentiality of the investigation information and customer information. A global service hotline was set up in 2015 covering pre-sales and after-sales inquiry and service in respect of the module business. For major distribution markets, corresponding regional service telephone channels were also set up. For example, Trina Solar set up a service hotline for the Australian market in 2019. Because of its many end-consumer users, Trina Solar set up a special call center, greatly improving the response speed for customers. In 2020, we made further progress in specific service measures by improving online and offline service networks, and providing a guarantee for timely offline customer service. Trina Solar received written praise from customers when performing services on multiple customer sites.

2019

78% Customer satisfaction

142 incidents Timely responded to customer's requests

2020

75% Customer satisfaction

184 incidents Timely responded to customer's requests

Shareholder Communications

In June 2020, Trina Solar became the first Chinese PV product, PV system and smart energy company to trade on the Shanghai Stock Exchange Science and Technology Innovation Board. This marked the opening of a new chapter in Trina Solar's innovative development. Trina Solar will maintain the advantages of its photovoltaic module business, based on which it conducts further research and development of commercial applications of ultra-high-power products, and developing photovoltaic systems and smart energy to create higher value for customers, continue to innovate, expand globally, and see out market opportunities, all of this with the aim of increasing returns and benefits to shareholders, investors, customers and society generally.

Trina Solar attaches great importance to creating profits and taking care of its responsibilities to shareholders, employees and investors. It holds regular shareholders' meetings to ensure transparency regarding the company's operating, production and financial performances through roadshows and reverse roadshows, annual performance briefings, field investigations, hotlines, etc.

Investor Exchange Meeting

Annual Performance Briefing

Investor Open Day

Materiality Analysis

Trina Solar uses various internal and external resources and channels to identify substantive issues of concern to stakeholders, and confirms the substantive issues of sustainable development covered in this report in accordance with GRI standards and the United Nations Sustainable Development Goals. (The factors to be considered when defining substantive issues and the identification channels of substantive issues are shown below.)

01

Factors Considered

- Reasonably estimable economic, environmental and social impacts.
- Interests and expectations of stakeholders.
- Main topics and future challenges of solar industry.
- Key applicable laws and regulations.
- Corporate's vision, mission, core values, strategies and goals.
- Core company competence and its contribution to sustainable development.

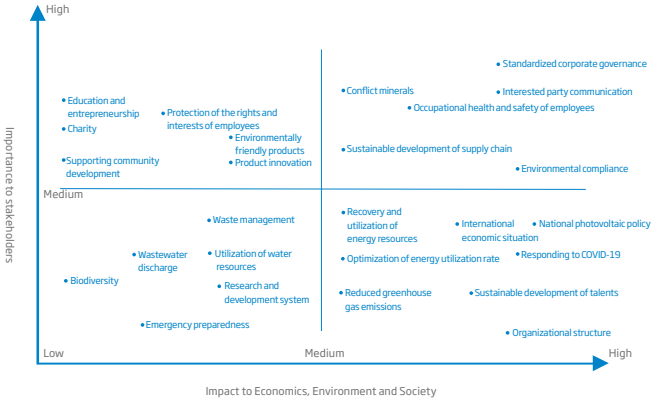
02

Identification Sources

- Customer and supplier survey.
- Company website, email, quarterly communication meeting.
- Employee blogs, forums and feedbacks.
- Company news release, social media channels.
- Meetings with customers, suppliers and government officials.
- Third-party audit on management system.

After identifying and listing materiality issues, we assign to them an order of priority in terms of stakeholder assessment and decision-making and their importance to economic, environmental and social impacts, and establish a matrix of these issues. Substantive sustainable development issue management can help us identify areas that need improving, including the level of sustainable development management, and respond to the concerns of stakeholders more comprehensively and pertinently. In addition, we regularly review and update the matrix of substantive issues with stakeholders to ensure that stakeholder expectations are always met.

Matrix of Sustainability Issues



Supporting UN SDGs

The 2030 Agenda for Sustainable Development provides a global blueprint for dignity, peace and prosperity for mankind and the Earth now and in the future. Trina Solar, proceeding from its own reality, internalizes this common vision into the company's development plan and strategy, and helps achieve the 2030 Sustainable Development Goal with real actions. In 2016, Trina Solar was invited to become a founding member of Advisory Committee on Sustainable Development initiated by the UN Development Programme and signed a declaration on sustainable development, promising to support the implementation of global sustainable development goals and to achieving the UN's 17 sustainable development goals in China by 2030.

SDGs	Our Actions in 2019 and 2020
SDG 1: End poverty in all its forms everywhere SDG 2: End hunger, achieve food security, improve nutrition and promote sustainable agriculture	• In December 2019, Trina Solar established the Siyuan Sunshine Fund to donate to and build a cultural activity center for Qunyi Village, Xinren township, Qianxi county, Guizhou province, which was completed the same month and can benefit more than 20,000 locals. • In June 2020, Trina Solar made donations to Suqian Charity Federation for poverty alleviation. • Trina Solar provided Zhengjue Temple energy storage microgrid system (200kW solar power + 250kWh energy storage microgrid), with 32 modules, powering from 285W to 290W. • In October 2020, Trina Solar carried out a residential solar project to Fengning county for poverty alleviation, to the villages of Gaozhazi and Heiniushan in Yangmuzhazi township, each village building a village-level power plant costing 92,000 RMB; It is used for residential photovoltaic construction and donated to 13 households in the town of Heishanzui, 10 households in the township of Tanghe, 10 households in the town of Humaying and 10 households in the township of Xiaobazi, totaling 43 households, each at 12,000 RMB.
SDG 3: Ensure healthy lives and promote well-being for all at all ages	• Trina Solar set up a project, specialized for employee caring, by regularly engaging external experts to provide guidance such as traditional Chinese medicine health classes, organic food's benefit, and popular science articles on healthy lifestyles, so as to relieve the pressure of work on employees and advocate healthy lifestyles. • Trina Solar set up various clubs, including badminton, basketball and table tennis to enrich employees' spare time. • Trina Solar set up yoga classes, and moxibustion classes and arranged regularly courses to improve the health of employees and shared health-related knowledge with them. • Trina Solar organized annual health check-ups each year and has introduced flexible welfare plans for employees to let them choose for themselves and their families according to their own needs.
SDG 4: Ensure inclusive and quality education for all and promote lifelong learning	• We have increased ceaselessly our investment in education, training and cultural construction, created a good environment for talent growth, perfected the learning and development system of employees, and provided a strong training support system for employees. • Since Trina University was established two years ago it has supported Trina Solar to improve organizational capacity building and business model development, providing talent development and empowerment services for Trina Solar, its partners and customers. • Trina Solar's caring volunteers have supported students from poor families in Liyang Daibu Primary School and Liyang Hengjian Primary School since 2019.

SDGs	Our Actions in 2019 and 2020
SDG 5: Achieve gender equality and empower all women and children SDG 8: Promote sustained, inclusive and sustainable economic growth and promote full and productive employment and decent work for all	• We strictly abide by relevant local laws and regulations and international conventions to ensure fair employment for male and female employees. Trina Solar strictly prohibits employment discrimination to ensure that the proportion of female employees in the company remains stable. While promoting the diversity of employees, we strive to provide employees with a good working environment and welfare benefits, actively promote the localization of overseas employees, and promote the employment of the population where the factory is located.
SDG 6: Provide water and sanitation for all and implement sustainable management	• We have implemented various water-saving projects such as concentrated water reuse, reclaimed water reuse and air conditioning condensed water reuse to improve the utilization rate of water resources. In 2019, water consumption per MW module of Trina Solar fell by 28% compared with that of 2015. In 2020, water consumption per MW module of Trina Solar fell by 50.6% compared with that of 2015. The water-saving projects implemented from 2015 to 2020 saved 3.92 million tonnes of water.
SDG 7: Ensure access to affordable, reliable and sustainable modern energy for all SDG 9: Build disaster-resilient infrastructure, promote inclusive and sustainable industrialization and promote innovation	• In 2019, as an exemplary case, Trina Solar Provides Microgrid Integration Solutions for 27 Islands of Maldives was included in the Sustainable Development Report of Chinese Private Enterprises' "the Belt and Road Initiative" 2019 jointly prepared by the All-China Federation of Industry and Commerce, the Institute of International Trade and Economic Cooperation of the Ministry of Commerce and the Representative Office of the UN Development Programme in China. This project is the largest solar+ storage + firewood microgrid project in the Maldives, and can provide green power for 27 local islands and ensure the safety and stability of electricity consumption. The project is expected to save about 2.6 million litres of diesel oil and 8,100 tonnes of carbon dioxide emissions a year, providing the main power source for the lives of more than 11,000 island residents, hospitals, kindergartens, docks and schools. • In 2020, Trina Solar took part in the work of the Energy, Sustainability and Climate Taskforce of the B20 for the Group of 20 in Saudi Arabia. Trina Solar was committed to transmitting the concept of green innovation and sustainable development, creating jobs in the field of solar energy, allowing the world to share outcomes of the solar technology and allowing solar energy to bring benefit to thousands of households.

SDGs	Our Actions in 2019 and 2020
SDG 12: Adopt sustainable consumption and production patterns SDG 13: Take urgent actions to address climate change and its impacts	• In line with international standards, we took the lead in establishing the ISO 50001 energy management system, ISO 14064 organizational level greenhouse gas emissions and elimination quantitative system and the PAS 2050/ISO 14067 product carbon footprint verification system in the photovoltaic industry, aiming to improve energy efficiency, reduce greenhouse gas emissions and save resources consumption. • We have continued to promote energy efficiency improvement projects, explored and implemented energy-saving projects, and optimized energy use. In 2019, Trina Solar's power consumption per MW module fell by 44.3% compared with 2015. In 2020, the power consumption per MW module of Trina Solar fell 59.7% compared with 2015. Energy-saving projects implemented from 2015 to 2020 saved 25.2 million kWh of electricity and reduced carbon dioxide emissions by 20,000 tonnes. • In 2019 and 2020, Trina Solar's manufacturing operation and R&D process in China continued to achieve zero carbon emissions during the whole production and produced clean photovoltaic products with clean energy.
SDG 11: Sustainable cities and communities	• In 2019, the clean energy generation capacity of Trina Solar's solar power plants in China was about 695 million kWh, and the power consumption of all manufacturing plants and R&D centers in China was 681 million kWh, exceeding power consumption by 14 million kWh. In 2020, the clean energy generation capacity of solar power plants owned in China was about 1.117 billion kWh, and the power consumption of all manufacturing plants and R&D centers in China was 705 million kWh, exceeding power consumption by 412 million kWh. This means that Trina Solar's operation activities in China will once again achieve zero emissions and zero carbon production which was a green cycle in 2019 and 2020. • The development of a 50MW "photovoltaic power plant leader project" in Yangquan, Shanxi province, and a 170MW one in Huaibei, Anhui province, provided green power resources, realized comprehensive land improvement in coal mining subsidence areas, solved the living problems of off-land farmers and ecological environment governance problems, improved the local environment, promoted local economic development, and boosted the development of local photovoltaic-related industrial chains.

Challenges and Opportunities

Trina Solar has always worked to improve its operational efficiency and competitiveness in a responsible and innovative way, grasped the challenges and opportunities of sustainable development with stakeholders, and promoted sustainable social, economic and environmental improvement. When formulating sustainable development strategies and goals, we fully consider the risks and opportunities as important factors in product design, procurement, manufacturing and delivery. As the world's leading photovoltaic company, we have passed certifications of ISO 14001, ISO5 0001, ISO 45001 and other standardized management systems, and established Trina Solar Risk Control Improvement Tracking System (RCTS), taking coping with climate change and using solar energy to benefit all mankind as our responsibility. The company has always focused on the opportunities and risks faced by the world and the operating location, promoting technological innovation and sustainable development of the photovoltaic industry, and has promoted the use of photovoltaic power generation to thousands of households, thus has benefited all mankind in coping with climate change and improving the natural environment.

International Economic Situation

Challenges and Opportunities

According to the International Energy Agency, from 2010 to 2019, the photovoltaic industry accounted for more than half of global investment of $2.6 trillion in renewable energy with $1.3 trillion. Solar will become the leader of renewable energy power growth.

Over the past five years China's photovoltaic industry-related companies have been involved in international trade disputes involving China's photovoltaic cell products such as in the European Union, the United States and India, leading to 201 special tariffs that the US imposed on imported photovoltaic cells and modules. The US, the EU and other countries and regions collected the anti-dumping and countervailing depostis for photovoltaic cells and modules. In 2018, MIP was abolished in Europe, and more photovoltaic companies entered the European market, which squeezed profit margins. The uncertainty brought by the pandemic in 2020 cast a pall over the global economy.

Changes in the international economic situation have led to coexisting opportunities and challenges.

Countermeasures

Trina Solar occupies a strategic position in the solar industry through actively participating in global collaboration projects and striving for technological innovation.

- Trina Solar took part in the Belt and Road Initiative energy collaboration project. As early as 2018, it began to provide microgrid integration solutions for 27 islands in the Maldives.
  This project is the largest solar + storage + firewood microgrid project in the Maldives, and can provide stable green power for the 27 islands and reduce carbon dioxide emissions by about 8,100 tonnes a year.
- In 2019, Trina Solar helped Lecter Shopping Center in Sydney, Australia, to achieve the perfect combination of carbon neutrality and great customer experience.
- In 2020, Trina Solar supplied all 86 MW photovoltaic modules for Italy's largest unsubsidized photovoltaic power plant, the Torre Antonacci Project.
- In 2020, Trina Solar and Ruisi Fund under TPG Group signed a project contract with a total transaction value of about $700 million, including 35 overseas photovoltaic power plant projects throughout Europe and Latin America, with total volume nearly 1GW.
- In December 2020, Jincheon photovoltaic power plant, invested and built by Trina Solar in South Korea, was connected to the grid. The plant has 500kW installed capacity.
- Also in December 2020, the Trung Son 35MW photovoltaic power plant project in Vietnam was connected to the grid and became another large-scale power project built by Trina Solar in the country after the 42MW Phong Phu project.

Energy Transformation and Application of Energy Innovation Technology

Challenges and Opportunities

The demand and supply of energy is a common concern worldwide and the core of almost all major challenges and opportunities. Building a clean and low-carbon global energy system is a basic trend in energy development, and low-carbon and intelligence have become pivotal in transforming global energy. For companies everywhere, energy efficiency has become a critical strategy in reducing costs and continuing to grow. The energy industry thus faces tremendous growth opportunities that call for rapid technological innovation.

Countermeasures

- From 2010 to 2020, Trina Solar's self-established State Key Laboratory of Photovoltaic Science and Technology invested about 10 billion RMB in research and development. It has now developed into a world-class technological innovation platform and has been cited as an exemplar in its field at the World Economic Forum.
- As of December 31, 2020, Trina Solar had 888 patents, including 313 invention patents, ranking the leading position in China's photovoltaic industry.
- Trina Solar began to demonstrate, research and develop 210mm modules in 2019 and took the lead in industrializing Vertex ultra-high-power modules, which adopted an innovative design, with power exceeding 670W and efficiency up to 21.6%.

Tackling Climate Change

Challenges and Opportunities

In 2018, the 48th plenary meeting of the UN Intergovernmental Panel on Climate Change issued its Special Report on Global Warming of 1.5℃. At the UN Climate Change Conference in 2019, countries engaged in lively discussion on the detailed rules for implementing the Paris Agreement to deal with climate change. In December 2020, China proposed the goal 3060 at the Global Climate Ambition Summit, aiming to have peak carbon dioxide emissions by 2030 and to achieve carbon neutrality by 2060.
Climate change has become a sharp focus of attention in government and business, and has become one of the most severe challenges the world faces.

Countermeasures

Trina Solar supports international and national carbon neutral strategies and has responded to climate change by:

- Passing the ISO 14064 verification of the quantitative system of greenhouse gas emissions and elimination at the organizational level in 2011; beginning the PAS 2050 certification of product carbon footprint in 2012; and achieved the ISO 50001 certification of energy management system in 2015 and taking part in global action to deal with climate change through continuous actions every year.
- In 2019 and 2020, we started planning to take part in global climate change action initiatives such as RE100. We committed to the Science Based Targets initiative (SBTi) in May 2021. We also promoted supply chain participation to lead low-carbon development in the photovoltaic industry with practical actions.

Corporate Governance

- Standardized Governance
- Organizational Structure
- Information Disclosure
- Investor Relations
- Risk Management and Internal Audit
- Legal Compliance Control and Ethics Construction

Standardized Governance

Being legally compliant does not just guarantee the survival of a company, it also provides the foundation for its very growth. Trina Solar has always adhered to compliance management, strictly abided by business ethics, protected intellectual property rights, established and continuously improved the management system of ethics and compliance, and established a responsible, trustworthy and compliant corporate governance organization. In strict compliance with the requirements of laws, regulations and normative documents such as the Company Law, the Securities Law, and the Rules Governing the Listing of Stocks on the Science and Technology Innovation Board of Shanghai Stock Exchange, Trina Solar constantly improves its corporate governance structure to ensure that: the shareholders can fully exercise their rights; the board of directors can fulfill its functions and powers in accordance with laws, regulations and the articles of association of the company and make decisions in a reasonable, responsive and prudent manner; the independent directors can conscientiously perform their duties and safeguard the interests of the company, especially the legitimate rights and interests of the small and medium shareholders; the board of supervisors can independently and effectively exercise the supervision and inspection power over directors, managers and other senior management personnel and the company's finance, providing an institutional guarantee for the company's growth. At present, a standardized corporate governance structure is in place. Directors, supervisors and senior management of the company can faithfully and diligently perform their duties and effectively improve corporate governance.

By adhering to the philosophy of trustworthiness above all else and consciously abiding by applicable laws and regulations, international conventions and business ethics of the countries and regions in which its business premises are located, the company conducts itself in good faith throughout the whole process of production and business activities, creating value for stakeholders and striving to create a brand image of standardized operation and trustworthiness first. We continue to build a compliance culture and strengthen employees' awareness of laws and compliance through training, publicity, assessment and accountability.

The company has won many awards by virtue of its well-functioning credit and risk control mechanism worldwide, including winning the title of national and provincial core strategic customer of China Export Credit Insurance Corporation, with a credit rating of AA. In 2018, the company was rated as a Jiangsu Credit Management Demonstration Enterprise by the Jiangsu Economic and Information Technology Commission. In 2019, Trina Solar (Changzhou) Technology Co., Ltd, a wholly owned subsidiary of the company, was awarded AEO Advanced Certification Enterprise by Customs. It is the second entity in the group achieving this certification after Trina Solar Co., Ltd, was named an Advanced Certification Enterprise in 2016. AEO Advanced Certification is the highest-level honor awarded by China Customs to honest companies.

Trina Solar is committed to becoming a leader in smart energy and to achieving a higher level of corporate commitment. We were awarded the ISO 14001 certification of environmental management system in 2008, the OHSAS 18001 certification of occupational health and safety management system in 2010 and the ISO 14064 verification of the quantitative system of greenhouse gas emissions and elimination at the organizational level in 2011. We began the PAS 2050 certification of product carbon footprint in 2012 and achieved the ISO 50001 certification of energy management system in 2015.

In the second half of 2020, the EHS department of the company carried out an internal audit of the EHS management system (including environmental management system ISO14001, occupational health and safety management system ISO 45001 and energy management system ISO 50001) for all manufacturing bases and downstream value groups of the company according to the requirements of international ISO standards. At the end of 2020, TÜV Rheinland conducted a comprehensive, detailed and strict third-party audit of all manufacturing bases and downstream value groups across the company. Since 2008, through the establishment, maintenance and improvement of management systems, we have been able to better implement the philosophies of environmental protection, safe production and occupational health in all aspects of the company's production and operations to fulfill corporate social responsibility and achieve the company's green and sustainable development.

No.	Name of factory/company	ISO 14001 Environment management system	ISO 45001 Occupational safety and health management system	ISO 50001 Energy management system	ISO 90001 Quality management system	ISO 14064 Carbon audit
1	Changzhou headquarters	Yes	Yes	Yes	Yes	Yes
2	Changzhou Trina Yabang factory	Yes	Yes	No	Yes	Yes
3	Yancheng factory	Yes	Yes	No	Yes	Yes
4	Hubei factory	Yes	Yes	No	Yes	Yes
5	Hefei factory	Yes	Yes	No	Yes	Yes
6	Energy storage factory	Yes	Yes	No	Yes	No
7	Thailand factory	Yes	Yes	No	Yes	No
8	Vietnam factory	Yes	Yes	No	Yes	No
9	Yiwu factory	Yes	Yes	No	Yes	Yes
10	Suqian module factory	Yes	Yes	Established in 2021	Yes	Yes
11	Suqian cell factory	Yes	Yes	Established in 2021	Yes	Yes

ISO 14001
Environment Management System Certificate

ISO 45001
Occupational Safety and Health Management System Certificate

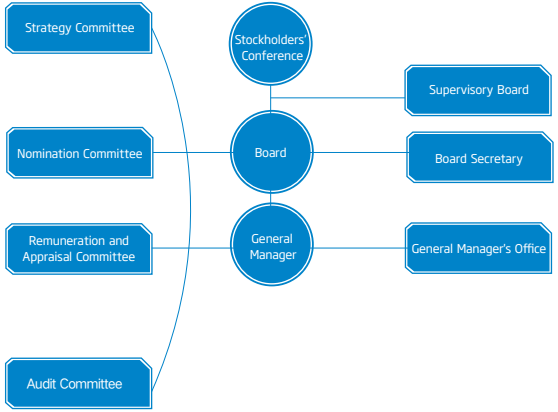
ISO 50001
Energy Management System Certificate

ISO 14064
Carbon Audit Certificate

Organizational Structure

The company never ceases to evolve, adapting to the times and industry changes, improving its core competitiveness and sprouting new organizational vitality. Since 2017, the company has continuously optimized the way it runs and strengthened business teams' operational awareness and ability by establishing operations profit examination units for business departments, clarifying the examination targets and incentive measures and simplifying flows. It has also intensified customer and market focused awareness, and dealt with market changes in a more agile and flexible way, thus being responsive to customer needs. For the functional support teams, the company strengthens their awareness and ability to provide support, service and motivation to the business departments, and responds to the frontline's requirements quickly, sharing resources effectively. At the same time, through effective monitoring, it ensures a good balance is kept between business growth and risk management and control. Such optimization reinforces the company's overall operational awareness and the way it deals with customers, accelerates the speed of response to the markets, and optimizes the professional capabilities of departments.

The organizational structure of the company is as follows:



Information Disclosure

To further improve the company's information disclosure system, during the reporting period the board secretary leads the work in establishing the Information Disclosure Working Panel covering business, finance, EHS, purchasing, marketing, legal compliance, strategy, etc, in order to improve the timeliness and efficiency of transmitting information, improve the internal control mechanism of information disclosure and enhance risk control and treatment capabilities by unifying and coordinating the transmission of significant information. In the disclosure period of this report, since listing in 2020, the company has disclosed 108 interim declarations and three regular reports. The highly efficient, transparent and regularized information disclosure system, with its honest, accurate and complete declarations, contributes to our excellent reputation in the market and more broadly for being highly scrupulous.

Investor Relations

As the world leading PV smart energy solution service provider, Trina Solar always ensures its governance is highly ethical, giving it an excellent image as a corporate citizen, and in the past two years it paid a lot of attention to investor relations. In June 2020, the company completed share allocation and issuance, with total funds raised of up to 2.5 billion RMB, and a price earnings ratio of 27.61 times higher than the average in the trade*. On June 12, Trina Solar was honored with the Changzhou National Hi-tech Park Enterprise Listing Award, reflecting investor confidence and the company's robust health.

Since its listing, Trina Solar has disclosed relevant information in a timely manner according to the CSRC's and Shanghai Stock Exchange's requirements, and has engaged extensively and closely with investors through roadshows, results meetings, investors' collective reception days, phone meetings, investors' communication platforms, onsite surveys, etc, and has replied to any investor concerns, thus promoting their understanding of the company.

*According to the electrical machinery and equipment manufacturing industry indices (C38) issued by China Securities Index Co Ltd, the mean static price earnings ratio in last month was 24.08 times.

Risk Management and Internal Audit

Risk management and control are essential in ensuring that a company grows in a stable manner. To better deal with internal and external risks and faciliate the company's sustainable and healthy growth, the company is always looking to improve its risk control mechanisms.

Each year the Risk Management Department identifies strategic, operational, financial, legal and platform transformation risks to the company. It helps management formulate specific risk alleviation measures, thus minimising the chance of significant losses in the company's operations. With the impact of the pandemic in 2020, the Risk Management Department formulated a significant operation index risk pre-warning mechanism, so as to realize pre-warning of risks against significant operational indices and reduce the chance of adverse influences from the risks.

In line with the Company Law, the Articles of Association of Trina Solar and other laws and regulations, the company has established and continues to improve the legal representative governance structure, rules of procedure and decision-making procedures, sets up general meetings, the Board of Directors, the Board of Supervisors and operational management, setting out their rights and responsibilities, realizing their balance and operation in a regularized manner, and ensuring to exercise voting rights, decision-making rights, monitoring rights and execution rights. Trina Solar sets up the Board of Directors, formulates a series of systems such as the Working Rules of the General Manager, the Internal Audit Rules, etc. The Board of Directors sets up four special sub-committees internally in order to ensure reasonable, regularized and efficient decisions.

The Board of Directors sets up the Audit Committee and establishes the Internal Audit Department. To ensure that the business is in compliance with the applicable regulations and that risks are under control, the Internal Audit Department strictly follows the Internal Auditing Standards of China and the Articles of Internal Audit of Trina Solar, and conducts internal audit work according to the audit plan as approved by the Audit Committee and management, independent of individual business departments and functional departments. The audit covers various functions such as R&D, purchasement , manufacturing, sales, customer service, HR and finance. The audit scope and focus areas will be adjusted according to the business development of the company.

The company has established the Trina Solar Risk Control Tracking System (RCTS) to ensure it effectively addresses each audit finding. To strengthen synergy of internal monitoring and to solve identified audit issues, in recent years the company has continuously reviewed the way audits are conducted, in conjunction with departments such as finance, quality, purchasing, HR and EHS to comprehensively identify risks to the company and seek to improve operations.

Legal Compliance Control and Ethics

Trina Solar supports the UN Global Compact, always insists on legally compliant operations, and ensures that adherence to ethics and legal requirements is part of the company's day-to-day operations. The company has formulated a series of rules and regulations including the Trina Solar Code of Business Conduct and Ethics, Management Measures for Rewarding Whistle-blowing, the Anti-corruption Policies, the Anti-trust Policies, the Regulations on Awards and Punishment of Employees' Behaviors, and uses those as guidance for employees, managers and suppliers. The Internal Audit Department has ad-hoc anti-fraud investigators responsible for promoting professional integrity and ethics practices and dealing with reports and complaints. We continuously strengthen the anti-corruption and anti-bribery management system and formulate requirements and operational guidelines on the company's governance. We urge employees to abide by commercial ethics in a clear, concise and direct manner, thus ensuring that the company's operations and management are always consistent with commercial behavior that is carried out in a way that is legal, fair and in good faith.

Action Items

The open complaint channels, such as email, hotline, Trina Solar Anti-fraud reporting with award Platform, QR code-scanning reporting platform, etc., are available in order to protect the legal rights and interests of the reporting parties and give appropriate awards.

New managers study Trina Solar Code of Business Conduct and Ethics to abide by them.

Personnel in key posts are obliged annually to disclose any conflicts of interest.

All employees are required to attend training sessions on the Code of Conduct and anti-corruption. Ethics and legal compliance courses are obligatory for new joiners in the learning platform. Qualified employees are eligible to pass their probations. The ratio of attendees accounts for 100%.

Product R&D and technology updating are development cornerstones for Trina Solar as it realizes sustainable development and maintains its leading position in the industry. The company continues to increase investment in R&D that allows for the running of high-end laboratories and a testing center. While respecting industrial IP rights, the company is always challenging technical thresholds to show the way with industrial standards.

Technology Leadership

- Research and Development System
- Product Innovation

Research and Development System

R&D Institutes

The State Key Laboratory of PV Science and Technology ("SKL PVST"), established by Trina Solar by self-raising 247million RMB, has a covered area of 15,000m². SKL PVST was accredited by China's Ministry of Science and Technology in 2013. SKL PVST was one of the first national key laboratories in photovoltaics the ministry accredited. From 2010 to 2020, SKL PVST had a total investment of about 10 billion RMB in R&D funding. It has become a world-class technical innovation platform, and has been cited as an exemplar in its field at the World Economic Forum.

By relying on Trina Solar, the SKL PVST works with international first-class R&D and certification testing institutes and establishes technical innovation teams comprising of domestic and overseas excellent scientific research personnel as its backbone. By the end of 2020, the company had 622 R&D personnel, including 14 doctors, 109 masters degree holders and 361 undergraduates. It has broken 20 world records for solar cell conversion efficiency and PV module output power, consolidating and enhancing the Chinese PV companies global leadership. The SKL PVST undertakes national scientific research projects, including two national 973 programs, five national 863 programs, six national key R&D programs and more than 60 other scientific research programs. The SKL PVST takes the lead in participating in the preparation of global PV standards, and proposes and releases IEC international standards on behalf of China, making it the leader in technology, quality and standards in the PV industry.

The State Key Laboratory of PV Science and Technology

National Model Enterprise for Technological Innovation

National Enterprise Technology Centre

PV Testing Laboratory

Trina Solar has an international first class PV testing center with improved crystalline silicon module reliability, crystalline silicon solar cell material – physical and chemical testing capabilities. Trina Solar has also established long-term strategic collaboration with internationally renowned certification and testing organizations. The SKL PVST has been honored with a series of accreditations, including as a CNAS certified laboratory, a TÜV PV first TMP laboratory, a CGC WMT laboratory, a TÜV CTF laboratory, a CSA WMTC laboratory, a TÜV Nord CTF laboratory, a global first UL 61730-2 laboratory, and a TÜV Sud CTF laboratory.

Trina Solar's World Records

Since 2011, the company and the SKL PVST have broken 21 world records with respect to solar cell conversion efficiency and PV module output power, becoming the first institute listed in the world's most authoritative PV cell development map in China.

From 2019 to 2020, Trina Solar broke the world records for the 19th and 20th times.

(2011-2021)

21 world records

List of S&T Awards/Qualifications 2019-2020

No.	Description of award/qualification	Issuing organization	Year granted
1	National Technical Innovation Demonstration Enterprise	Ministry of Industry and Information Technology of the PRC	2020.12
2	National IP Rights Demonstration Enterprise	China National Intellectual Property Administration	2019.12
3	The 21st China Patent Award 2019 (Excellent Award)	China National Intellectual Property Administration	2020.07
4	2019 Higher Education Scientific Research Excellent Results Award (Scientific Technology Advancement Award) – First Prize	Ministry of Education of the PRC	2019.12
5	2020 China Renewable Energy Society Scientific Technology Advancement Award – First Prize	China Renewable Energy Society	2020.09
6	2019 China Electrical Engineering Scientific Technology Advancement Award – First Prize	Chinese Society for Electrical Engineering, Chinese Office for Electricity Science and Technology Awards	2019
7	2019 Electrical Innovation Award	China Electricity Council	2019.11
8	2019 China Electrical Engineering Scientific Technology Advancement Award – Second Prize	Chinese Society for Electrical Engineering, Chinese Office for Electricity Science & Technology Awards	2019
9	State Grid Corporation of China Scientific Technology Advancement Award – Second Prize	State Grid Corporation of China	2019.11
10	2019 Jiangsu S&T Award (Second Prize)	Jiangsu Provincial Department of Science and Technology	2020.03
11	2018 Jiangsu S&T Award (Second Prize)	People's Government of Jiangsu province	2019.03
12	The 10th Provincial Patent Award 2019 (Excellence Award)	Intellectual Property Office of Jiangsu province	2019.07
13	2018 Shanghai S&T Award (Second Prize)	Shanghai People's Government	2019.01
14	2019 Jiangsu Top 100 Innovative Enterprises (2nd Place)	Jiangsu S&T Development Strategy Research Institute	2020.07
15	2020 Jiangsu Top 100 Innovative Private Enterprises (2nd Place)	Jiangsu Federation of Industry and Commerce	2020.09
16	2018 Jiangsu Top 100 Innovative Enterprises (Top 3)	Jiangsu Provincial Scientific and Technological Development Strategy Research Institute, Jiangsu Provincial Scientific and Technological Intelligence Research Institute	2019.05
17	2020 Jiangsu Photovoltaic Industry Association PV S&T Award – First Prize	Jiangsu Photovoltaic Industry Association	2020.12
18	2019 Jiangsu Photovoltaic Industry Association PV S&T Award – Third Prize	Jiangsu Photovoltaic Industry Association	2020.04
19	The 3rd Changzhou Patent Gold Award 2019	Changzhou People's Government	2020.04
20	The 2nd Changzhou Patent Gold Award 2018	Changzhou People's Government	2020.04

Product Innovation

Trina Solar respects others' IP rights, continuously drives to promote innovation breakthroughs points in PV technology, and leads and has taken part in formulating international and domestic standards several times.

We are committed to abiding by international and local IP rules. We have established the IP Rights Management Committee and formulated the General Rules of Management of IP Rights, Patent Management System, Procedures for Management of Business Secrets, etc, to protect Trina Solar's IP rights.

At the end of 2020, Trina Solar had applied for a total of 1,906 patents, including 872 patents of invention (including 39 PCTs, and 49 international applications), and owned 888 valid patents, including 313 patents of invention (including three in the US, two in Europe, two in Japan and one in South Korea).

Trina Solar was approved to be the National IP Advantageous Enterprise in 2018 and the National IP Pilot Enterprise in 2019. In 2020, the company was granted the IP Strategic Advancement Plan Key Project in Jiangsu. The patent for monocrystalline silicon bifacial solar cell and its preparation method (patent No. ZL201610328025.3) was honored with the 2nd Changzhou Patent Gold Award, the 11th Jiangsu Patent Award 2019 and the 21st China Patent Award 2019. The patent for Solar cell with passivation on the back of laminated film and preparation method (patent No. ZL201310179373.5) was honored with the 1st Changzhou Patent Gold Award. The patent of distributed local boron-doped bifacial photosensitive crystalline silicon solar cell and it's preparation method (patent No. ZL201410321813.0) was honored with the 3rd Changzhou Patent Gold Award.

Since 2019, Trina Solar has taken the lead in stating the case for research and development of 210mm modules. In 2020, Trina Solar prepared to launch the Vertex ultra-high power modules worldwide and take the lead to realize its industrialization. The Vertex series, based on a 210mm silicon PERC monocrystal cell, adopts an innovative design, and superimposes several industry leading technologies such as multi-busbar, non-destructive cutting and high-density interconnection technology. The power of the module is up to 670W, with its efficiency up to 21.6%, leading the industry to formally enter the PV 6.0 and 600W+ ultra-high power era.

In the course of R&D of the Vertex modules, Trina Solar's R&D team forged into the future and, based on the multi-busbar that was the first for batch production in the industry, integrated the non-destructive technology and high-density interconnection technology into the Vertex module platform technology. This not only further reduces resistance loss and enhances anti-crack and hot spot proof performance of the modules, but also maximizes use of space and improves product performance. The combination of several innovative technologies makes Trina Vertex modules more efficient, and with higher power and reliability. Trina Solar creatively proposed the design philosophy of lower voltage and high string power. According to the assessment of the authoritative institute DNV GL, compared with traditional components, the Vertex series enhances the module string power by 30-40%, lowers BOS cost 17%, and LCOE costs fell 2%-6%. After going on the market, the products became a huge focus of interest in the industry, drawing acclaim from rival companies and customers alike.

From deploying the 210mm silicon wafer to launching 210mm Vertex ultra-high power modules, Trina Solar has creatively perpetuated its philosophy of continuously seeking to produce high-quality products. Since the Vertex modules were launched they have become available in a range comprising 400W, 500W, 550W, 600W and 670W units. Trina Solar's 210mm ultra-high power modules and system-integrated new technology platform has pointed to the way ahead for the PV industry. Propelled by a vision of benefiting people and realizing carbon neutral, Trina Solar launched the 600W+ PV alliance, joining with others in the industry to drive the standardization of silicon wafer sizes, modules, supply chains and the industry chain.

In 2020, Trina Solar put 600W+ ultra-high power components on the market, setting a benchmark for the PV 6.0 era.

Taking Part in Preparing Standards

- The SEMI Test Method for Cell Defects in Crystalline Silicon PV Modules by Electroluminescence (EL) Imaging (standard No. SEMI PV94-0420) dominated by Trina Solar was promulgated in April 2020. After this standard was issued, it was to be implemented globally as a unified technical specification.

- The national standard acceptance specification of building integrated photovoltaic power systems (standard No. GB/T 37655-2019) and the rubber components for solar photovoltaic (standard No. GB/T 38391-2019) that Trina Solar took part in preparing were unveiled in June and December 2019 respectively. They were to be implemented nationwide as unified technical specifications.

Scientific Research Results

Aiming to accelerate the advance of the PV industry, in July 2020, companies in the industry chain of silicon wafer, solar cell, PV module, tracker, inverter, materials and equipment manufacturing joined to launch 600W+ Photovoltaic Open Innovation Ecological Alliance.

We put our motto "solar for all" into practice throughout our business value chains by harnessing green energy, in this instance solar, and our commitment can clearly be seen in our research, development and production. We are a distributor of green energy as well as a practitioner of green development. We are committed to promoting business growth that goes hand in hand with environmental protection, and doing so through continuous innovation. We are eager not to leave our marks on the planet but to make a big mark in the way we contribute to protecting nature. In all our business operations we identify the environmental effects of our activities, pay attention to how sparingly we use resources as well as the potential for renewability and push ourselves to the limit to mitigate any negative effects caused to the Earth. In setting its 2020 sustainable development goals, Trina Solar is committed to working with its partners to conduct its business in an environmentally friendly, responsible and sustainable manner. Thanks to our global performance in corporate social responsibility and corporate citizenship, we were granted gold recognition level in EcoVadis' Corporate Social Responsibility (CSR) assessment twice in a row.

Caring for the Planet

- Green Sustainable Development
- Tackling Climate Change
  - Reduction of GHG emission
  - Enhancement of Energy Efficiency
  - Environment-friendly Products
  - Innovation & Sustainable Development
  - Recycling and Disposing of Scrapped PV Modules

  Environment-friendly Operation
  - Sustainable Use of Water
  - Wastewater Discharge
  - Reduction of Exhaust Gas Emission
  - Solid Waste Management
  - Green Office
- Biodiversity Management
- Sustainable Purchasing
  - Sustainable Development of Supply Chain
  - Conflict-free Minerals
  - Mutually Beneficial Collaboration with Suppliers

Electricity from clean energy sources exceeds electricity consumption

2019 14 million kWh

2020 412 million kWh

Decline in greenhouse gas emissions

46.0% 2019

68.6% 2020

Reduction of consolidated energy consumption per MW module

17.5% 2019

29.5% 2020

Reduction of natural gas consumption per MW module

85.6% 2019

94.4% 2020

Reduction of electricity consumption per MW module

44.3% 2019

59.7% 2020

Reduction of water consumption per MW module

27.96% 2019

50.56% 2020

Green Sustainable Development

Trina Solar is dedicated to the development of solar energy in the global market. Since 2018, we have been honored as "Green Factory" by the Ministry of Industry and Information Technology of the People's Republic of China. We strive to provide our customers with high-quality products and system solutions that are cost-effective with less environmental impacts. By responding to ever-increasing energy demand through the use of clean energy, we make sure to offer affordable and sustainable solutions in the face of challenges, which climate change and energy crisis present us with.

We implement policies and procedures of green management in our production. In line with the ISO 14001 environmental management system and the ISO 50001 energy management system we have formulated strict regimes on environmental emissions, resource use and energy management systems. The group, focusing on conserving energy and reducing emissions in its business operations, includes both intensified energy use and the extent of recyclability in the decision-making process, and is committed to reducing any adverse environmental impacts that our own business activities may cause. We have conducted carbon emissions verification covering manufacturing sites in compliance with ISO 14064. Our 2020 sustainable development goals have been fulfilled in response to our promises made for China's 13th Five-year Plan (2016-2020): Compared with the base year 2015, for one production unit of each electricity power produced (MW), we pledged to reduce greenhouse gas emissions by 15%, comprehensive energy use by 10%, electricity use by 15% and water use by 10%. We are engaging in collaboration with global partners, academic institutions, governments and NGOs to promote the purchase of solar power. Trina Solar will accelerate green development by maximizing the use of solar power in dealing with climate change. Trina Solar has been planning to take part in the RE100 climate change action initiative since 2020. We committed to the Science Based Targets (SBTi) in May 2021. Trina Solar supports the organization the United Nations Global Compact. Our mission is "solar for all". We firmly believe in sustainable development and are striving to contribute more economically, socially and environmentally to achieve the UN 2030 sustainable development goals.

Trina Solar Sustainable Development Goals

Trina Solar 2020 sustainable development goals	total GHG emission (tCO_2e/MW)						2019 decreased percentage *Comparing to 2015	2020 decreased percentage *Comparing to 2015
	2015	2016	2017	2018	2019	2020		
15% reduction of GHG emissions per MW module (tCO_2e/MW)	182.6	168.0	132.3	119.0	98.6	57.4	46.0%	68.6%
10% reduction of consolidated energy consumption per MW module (tec/MW)	13.2	13.1	11.0	10.8	10.9	9.3	17.5%	29.5%
15% reduction of electricity consumption per MW module (MWh/MW)	221.0	187.0	163.0	134.0	123.0	89.0	44.3%	59.7%
10% reduction of water consumption per MW module (t/MW)	1,885.0	1,744.0	1,592.0	1,360.0	1,358.0	932.0	28%	50.6%

Environmental, Occupational Health and Safety, and Energy Management Policies

Trina Solar has environmental, occupational health and safety, and energy management policies that are used as guidelines for our actions. We urge every employee to take personal responsibility for observing our guidelines and policies and promoting them.

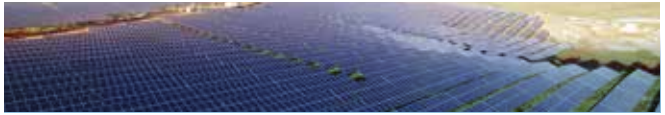
We pay attention to employees' health & safety and sustainable development. We are dedicated to creating a safe, healthy and environmentally-friendly workplace for employees and a harmonious green planet for mankind. We promise to use energy and natural resources responsibly and efficiently. Herewith we pledge the following:

- Comply with all applicable EHS & energy management laws & regulations and meet interested parties' requirements.
- Be committed to prevention of pollution and minimizing negative impact on environment. Promote sustainable development and build a green and low-carbon planet.
- Be committed to prevention of occupational injury and illness. Provide a safe, healthy and environmentally-friendly workplace for employees.
- Make efficient use of energy and resources. Consistently reduce energy consumption and carbon emission from production and commercial operations.
- Enhance employees' EHS & energy conservation awareness and encourage employees to participate in EHS & energy conservation programs.
- Provide necessary resources for implementing EHS & energy management system. Continually improve performance via perfecting EHS & energy management system.
- Regularly provide transparent EHS report to stakeholders and other relevant interested parties.
- Pledge our support and commitment to help our suppliers improve their EHS & energy management performance and take social responsibility.

Environmental Management System

The group has always adhered to the highest standards of environmental protection principles in its operations. With a full coverage of our manufacturing plants in both China and abroad, we established a set of standard management process in compliance with the ISO 14001 environmental management system. We integrate concerns of ecological protection and environmental impact into the whole life cycle of our business value chains. The environment management policy and process are implemented effectively in our products, activities and services, covering site selection of manufacturing sites and PV power plant, designing and construction, to plant operation, taking local ecological protection and biodiversity conservation into account. Our care for the environment is embedded in the overall management process, which involves various departments in our process of sustainable management.

- Engineering department and global project development are responsible for local ecological protection and biodiversity conservation.
- The R&D department is responsible for developing products for higher conversion rate; the production department is responsible for improving the efficiency of energy using and resource using.
- The EHS and facility departments are responsible for treatment and discharge of wastewater, exhaust gas and solid waste in compliance with standards.
- Logistics and warehouse are in charge of finding solutions to reduce the environmental impacts of transportation.



Aspects	Actions
Site selection, design and construction of plants/PV power plants	•Environmental impact assessment, evaluate positive and negative impacts of the proposed projects on the community's environment; •Ensure the environmental protection facilities are designed, built and put into use at the same pace with the project; •Protect the community's natural environment and biodiversity.
R&D	•Incorporate the concept of environmental protection into R&D and improve the product conversion rate; •Strictly limit material selection by including environmental concerns in product design. Minimize the environmental impact at the end of the product life cycle.
Production	•Ensure sustainable use of resources; •Improve energy efficiency continuously; •Wastewater, exhaust gas are treated in compliance with regulations and discharged in compliance with standards; •Promote resource recycling; •Adopt green operations in the offices.
Packaging	•Reduce use of packaging materials without affecting packaging safety; •Choose recycled and degradable packaging materials.
Logistics	•Plan a transportation route with impact on the environment as little as possible; •Optimize the way of transportation; •Improve the utilization of containers.
Product recycling	•As of 2020, we had joined PV CYCLE certification in European markets including Belgium, Finland, France, Germany, Ireland, Italy, the Netherlands, Spain and the UK and encouraged our downstream customers to join in, so as to dispose of scrapped PV module products in an environmentally friendly way; •We encourage our downstream clients to join the Glass Recycling Committee of Japan.

Tackling Climate Change

Trina Solar has long been active in responding to global climate change. Internally, we reduce the carbon footprint of our products and optimize the efficiency of resource utilization in production activities. Externally, we work with others to meet the needs of technological innovation. With the ever-increasing demand for clean energy, we will adopt energy-saving and emissions-reduction measures to cut greenhouse gas emissions, promote green development and jointly build an ecologically conscious society.

Aspects	Countermeasures
Set up 2020 Green Sustainable Development Goals	Trina Solar formulated the 2020 Sustainable Development Goal: Compared to that of 2015, reducing 15% of GHG emissions per MW module (tCO_2e/MW) , 10% of comprehensive energy consumption per MW module (tce/MW), 15% of electricity consumption per MW module and 10% of water consumption per MW module (t/MW) Since April 2020, we have paid keen attention to RE100 and Science-Based Targets (SBTi). We carried out work to prepare to join the RE100 global renewable energy initiative.
Improved Resource Utilization	In 2019, Trina Solar achieved a reduction of 44.3% and 28% in power consumption and water consumption per MW module compared to 2015. In 2020, Trina Solar achieved a reduction of 59.7% and 50.6% in power consumption and water consumption per MW module compared to 2015. It is far beyond the goal of reducing power consumption by 15% and water consumption by 10% in 2020.
Improvement of Environmental Management System	We took the lead in establishing a corporate energy management system among photovoltaic industry in accordance with the international standard ISO 50001. We also took actions about GHG emissions verification in line with the ISO 14064 standard on organization level. We established a complete product carbon footprint verification system in line with the PAS 2050/ISO 14067 standard, aiming to continuously improve resource utilization, reduce GHG emissions and reduce resource consumption.
Clean Solar Energy	Since 2016, Trina Solar has achieved "zero" carbon emissions for operations in China. In 2019, Trina Solar consumed 681 million kWh of power for all factories and R&D centers' operations in China. The solar power plants owned by Trina Solar in China generated 695 million kWh of clean solar power. In 2020, the power consumption for all operations in China was 705 million kWh, and the clean solar power generation reached 1.12 billion kWh.
Pollution Control Facilities	In recent years, Trina Solar has established sophisticated wastewater and exhaust gas treatment facilities to ensure that discharge of wastewater and emissions of exhaust gas stably meets environmental standard limits. In 2019, Trina Solar's total environmental protection inputs reached RMB 44 million (about US$ 6.9 million). In 2020, Trina Solar's total environmental protection inputs reached RMB 61.3 million (about US$ 9.6 million)
Internal Carbon Trading Scheme	Trina Solar actively participates in global GHG emissions reduction activities and programs to increase employees' awareness of emissions reduction. We establish an internal carbon trading scheme. We setup an annual integrated energy consumption target for each department and carry out assessments monthly. We award carbon emissions bonuses for those departments who have achieved their targets, and impose carbon emissions penalties for those who have not fulfilled their carbon emissions targets.
Supply chain sustainability	Trina Solar has always been both a clean energy advocate and a low/zero carbon practitioner. We actively participate in global emissions reduction initiatives. In 2017, Trina Solar took part in the CEO Council, Sino-US Sustainable Urbanization of Paulson Foundation. This provides advantage for us to promote the development of clean energy technologies and make our contributions to worldwide emissions reduction campaign. We pay attention to the social responsibility of our global suppliers and partners. We continuously reduce carbon emissions in supply chain by promoting the optimization of the packaging methods, transportation modes, and increasing local supply of products and raw materials, so as to jointly promote the sustainable development of photovoltaic industry.
Green energy product	At the end of 2020, the cumulative shipment of PV modules was about 66GW. The PV modules conversed sunlight into electricity, which can reduce carbon dioxide emissions by 88.83 million tonnes per year compared to thermal power generation, assuming each panel is operating normally. Trina Solar strives to explore innovative solar energy application model and implement 'PV +' strategy. We make our contributions to the construction of ecological civilization and the response to global climate change. At the end of 2020, the cumulative grid connected of Trina Solar's global solar power plants exceeded 5GW.

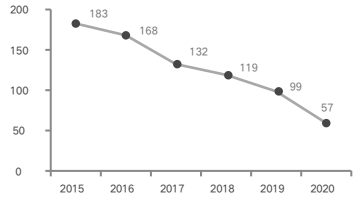
Reduction of GHG Emission

Trina Solar has been paying attention to sustainable development. We have conducted ISO 14064 GHG emissions verification and have disclosed our carbon emissions annually since 2014. We always look for opportunities to reduce GHG emissions in product design, production, and packaging processes. We continuously identify potential energy-saving projects, aiming for fulfillment of our commitment to sustainable development. Trina Solar conducts GHG verification annually in accordance with international standard ISO 14064 requirements. The scope of verification includes scope 1- direct GHG emissions and scope 2 - indirect GHG emissions. We continuously monitor and improve our GHG management performance. Total GHG emissions for Trina Solar's China operations in 2019 and 2020 were 527.6 thousand tonnes and 538.7 thousand tonnes of CO_2e, which was approximately 13.4% and 8.9% lower than that of 2018.

Based on the requirements of "The Vienna Convention for the Protection of the Ozone Layer" and "The Montreal Protocol on Substances that Deplete the Ozone Layer", all the refrigerants and fire extinguishing agents used in Trina Solar plants do not contain ozone depleting substances (ODS).

Trina Solar Energy Storage has provided large-scale industrial and commercial system solutions in places such as the Maldives, Alice Springs in Australia and Mauritania. The Maldives project is a customized micro-grid cluster solution based on the various electricity needs of the 27 islands in the Maldives and the existing electricity structure. It solved the problem of insufficient electricity supply to about 11,000 residents. The project is expected to save about 2,600,000 liters of diesel a year and reduce carbon GHG emissions by about 8,100 tonnes. Currently, more and more attention is paid to the pairing of economic growth and environmental protection. The government encourages the development of resource-saving and environmentally friendly industries such as photovoltaic and energy storage. We will continue to support energy reform with technological and industrial innovation, to keep the energy structure heading in a cleaner and environmentally friendly direction.

GHG Emissions Per MW Module (T/MW)



2019 reduction in GHG emissions

↓ 46.0%

2020 reduction in GHG emissions

↓ 68.6%

*In comparing to the base year 2015

GHG emissions, CO_2e (1,000 tonnes)	2018	2019	2020
Scope 1 direct GHG emissions	9.1	7.4	13.7
Scope 2 indirect GHG emissions	600.4	520.2	570
Total emissions	609.5	527.6	583.7

*In 2020, because of the addition of new factories-Suqian and Yiwu plants, the total emissions rose compared with 2019. GHG inventory figures of 2019 cover Trina Solar's Changzhou plant, silicon wafer plant, Yancheng plant , Yabang plant, Hefei plant and Hubei plant; GHG inventory figures of 2020 cover the Changzhou plant, silicon wafer plant and Yancheng plant , Yiwuplant , Hefei plant, Hubei plant, Yabang plant, Suqian pv module plant and Suqian solar cell plant.

GHG types, CO_2e (1,000 tonnes)	2018	2019	2020
CO_2	604.1	522.0	570.7
CH_4	0.04	0.20	0.24
N_2O	0.002	0.0008	0.0003
HFCs	5.4	5.4	12.1
PFCs	0	0	0
SF_6	0	0.0514	0.72991
NF_3	0	0	0

*In 2020, because of the addition of new factories-Suqian and Yiwu plants, the total emissions rose compared with 2019. GHG inventory figures of 2019 cover Trina Solar's Changzhou plant, silicon wafer plant, Yancheng plant, Yabang plant, Hefei plant and Hubei plant; GHG inventory figures of 2020 cover the Changzhou plant, silicon wafer plant and Yancheng plant , Yiwuplant , Hefei plant, Hubei plant, Yabang plant, Suqian pv module plant and Suqian solar cell plant.

Enhancement of Energy Efficiency

Sustainable development requires not only clean energy, but also higher energy efficiency. Trina Solar focuses on reducing environmental impact from its operations. We strive to enhance our energy use efficiency while using our energy in a responsible manner. Trina Solar continuously reduces CO_2 emissions and makes our best efforts to produce more cost-competitive products and contribute to climate change mitigation.

Trina Solar headquarters' plants in Changzhou took a lead to establish Energy Management System ISO 50001 in the photovoltaic industry in accordance with international standard. We continuously reduce energy consumption and improve our energy use efficiency by establishing energy targets, defining and refining energy conservation responsibilities, as well as implementing energy conservation projects. We systematically applied energy conservation measures and energy saving technologies to real practice.

Internal Carbon Trading Scheme

The primary energy mainly used in our company is natural gas. The secondary energy includes electricity and diesel. The energy-consumed media include water, nitrogen, oxygen and argon. We record and analyze the consumption of primary and secondary energy. Meanwhile we calculate the consumption of indirect energy consumed media. We report them in the form of standard coal-equivalent (SCE) consumption per MW module production on a monthly basis, i. e., integrated energy consumption (tce/MW).

We implemented an internal carbon trading scheme for all domestic and overseas plants. We setup an annual integrated energy consumption target for each department and then performed monthly assessments. Based on the average carbon price in the domestic carbon trade market, we awarded carbon emissions bonuses for those departments who have achieved their targets, and imposed carbon emissions penalties for those who have not fulfilled their carbon emissions targets. We sent a monthly message to department managers, reminding them to be aware of the impact of their operating activities on the environment. We encouraged them to develop technologies and carried out energy conservation projects, so as to continuously reduce energy consumption and GHG emissions from operations.

Green Factory

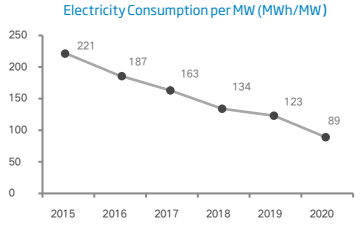
As a leader in the global solar industry, Trina Solar is committed to green manufacturing in terms of plant construction, raw material selection, production processes, waste utilization, and energy consumption, and strives to build a green factory with intensified plants, harmless raw materials, clean production, waste recycling and low carbon emissions. In the future, Trina Solar will actively play a demonstration role in green manufacturing, actively implement green strategies, green standards, green management and green production, and strive to build a green manufacturing system that is efficient, clean, low-carbon, and ecological. Trina Solar will lead the green culture.

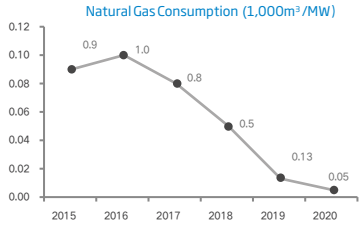
Types of Energy	2015	2016	2017	2018	2019	2020
Natural Gas consumption (1,000m³)	2,710	4,550	3,270	1,970	990	530
Elecetricity Purchased (MWh)	634,931	861,112	998,869	876,252	912,411	1,007,825
Integrated Energy Consumption (tce)	92,104	106,940	150,513	132,331	137,296	148,086
Natural Gas Consumption per MW (1,000m³/ MW)	0.9	1.0	0.8	0.5	0.13	0.05
Electricity Consumption per MW	221	187	163	134	123	89
Comprehensive energy consumption per product unit (tce/MW)	13.15	13.12	11	10.81	10.85	9.27

*In 2020, because of the addition of new factories and the expansion of production capacity, electricity purchased and integrated energy consumption has increased compared with 2019.

The figures of 2019 cover Trina Solar's Changzhou plant, silicon wafer plant, Yancheng plant, Yabangplant, Hefei plant, Hubei plant, Baotou plant, Hezhong plant, Suqian PV module plant, Thailand plant and Vietnam plant; The figures of 2020 cover the Changzhou plant, silicon wafer plant, Yancheng plant, Yabang plant, Hefei plant, Hubei plant, Baotou plant, Hezhong plant, Suqian PV module plant, Yiwu plant, Suqian solar cell plant, Thailand plant and Vietnam plant.

*Compared to 2019, the reason for the decrease in natural gas consumption in 2020 is the suspension of boiler use at Changzhou plant.





2019 natural gas consumption per MW decreased

↓ 85.6%

2019 electricity consumption per MW decreased

↓ 44.3%

2019 integrated energy consumption per MW decreased

↓ 17.5%

2020 natural gas consumption per MW decreased

↓ 94.4%

*Compared with base year 2015

2020 electricity consumption per MW decreased

↓ 59.7%

*Compared with base year 2015

2020 integrated energy consumption per MW decreased

↓ 29.5%

*Compared with base year 2015

Trina Solar 2019 Energy Conservation Project Statistics

Location	Description	Energy Saved	Reduced Carbon Emissions (tCO2e/year)
Yancheng plant	Updated of chiller and CDA system, integrate central control system.	500 MWh/year	400
Changzhou plant (east)	Increased operative COP of chillers by adjusting water temperatures; COP changed from 4.15 to 4.65.	876 MWh/year, cost saving of 596,000 RMB	700.8
Changzhou plant (east)	Added split air conditioner in some areas in PV module plant and solar cell plant, resulting in fewer chillers and operational hours.	2,154 MWh/year, cost saving of 1.464 million RMB	1,723.2
Changzhou plant (east)	Replacement of lighting system with energy-saving lamps.	547.95 MWh/year	438.32
Changzhou plant (north)	Facility room upgrade with a group control module. The control module will make precise adjustments based on the efficiency of all main equipment under various operating conditions, conduct comprehensive analysis and decide on the optimal economic operation strategy of equipment, system and overall energy station.	Cost saving of 1.398 million RMB	-

Trina Solar 2020 Energy Conservation Project Statistics

Location	Description	Energy Saved	Reduced Carbon Emissions (tCO2e/year)
Yiwu plant	Reduced energy consumption of lighting.	500 MWh/year	400
Yiwu plant	Air compressor heat recovery.	300 MWh/year	240
Yancheng plant	PCW free cooling retrofit.	400 MWh/year	320
Suqian plant	Heat recovery from exhaust air to preheat supply air resulted in less steam use in preheating and lower frequency of filter alteration.	350,000 RMB/year	-
Changzhou plant (east)	Replacement of lamps and changes of operational hours to reduce the electricity consumption.	42.2 MWh/year	33.73
Changzhou plant (north)	Replaced traditional chiller with high COP Maglev solution, which reduced energy consumption, meaning the better and more stable system performance.	1.361 million RMB	-
Changzhou plant (north)	Replacement of lighting system with energy-saving lamps.	438 MWh /year	350

Environment-friendly Products

Creating a sustainable future requires cleaner energy. As the world's population continues to increase, dealing of the world population's demand for energy has become an unprecedented challenge. We not only conduct our operation in a responsible manner, but also contribute to meeting the rising demand for clean energy by establishing Product Stewardship Policy, technological innovations, efficiency improvement, and adequate disposal of end-of-life PV products, so as to actively respond to global climate change.

Clean, Green Energy

Global energy system is accelerating the transition to low carbon. The large-scale utilization of renewable energy and the cleanliness & low carbonization of conventional energy will be the basic trend of energy development. Accelerating the development of renewable energy has become the mainstream of global energy transformation. Compared with traditional coal-fired power generation, solar energy can significantly reduce CO_2 emissions. How we can produce more clean energy, which can significantly reduce CO_2 emissions, is regarded as one of the biggest challenges we face. Trina Solar is committed to continuously exploring and applying technologies that increase PV product efficiency and help reduce CO_2 emissions. We strive to use the clean solar energy to promote energy transformation. We are committed to systematically addressing the issues of economic development, environmental protection and energy security and providing the clean solar energy to the public.

At the end of 2020, the cumulative shipment of PV modules was about 66GW. The PV modules conversed sunlight into electricity, which can reduce carbon dioxide emissions by 88.83 million tons per year compared to thermal power generation, assuming each panel is operating normally. Trina Solar strives to explore innovative solar energy application model and implement 'PV +' strategy. We make our contributions to the construction of ecological civilization and the response to global climate change.

As of 2020, the cumulative grid-connected volume of our PV power projects developed and invested by Trina Solar in China exceeded 5GW. Our manufacturing and R&D operations have achieved "zero" carbon emissions again in 2019-2020 in China, enabling the goal of producing our clean energy products with clean energy.

Development of global PV power plants accelerates market scale of green power

In 2020, Trina solar transacted nearly 1 GW solar PV projects portfolio with 35 overseas PV power projects in Europe and Latin America to The Rise Fund, a global impact investing fund managed by TPG. Trina Solar will provide project development, design, procurement and EPCM services of these projects to TPG. The total scale is about 1GW and amount of the transaction is around $700 million.

Trina Solar's Supreme series modules awarded a CGC first-class I photovoltaic leader certificate

On August 9, 2020, the 14th SNEC international solar photovoltaic and smart energy exhibition was in full swing. Trina Solar, with members of the 600W + Photovoltaic Open Innovation Ecological Alliance, presented the seminar "System and application advantages of 600W+ high-module string power output in the era of parity". At the meeting, China General Certification Center (CGC Jianheng), a well-known third-party testing and certification organization in China, issued and awarded officially the "New Standard Basic Certification" and "FrontRunner Frontier Technique Product certification" for Trina Solar Vertex ultra-high power modules. In 2020 the Vertex series modules products adopted an innovative design, and the power can exceed 600W. Its low voltage, high string power features can reduce BOS and lower LCOE.

Product life quality assured by reliability test

We set up reliability tests to give our products a longer life. Given that the average life span for the PV module is 25 years, Trina Solar has long been conscious of this challenge and has explored the optimization to extend the life cycle of our products to reduce the amount of discarded modules in the future. We continuously explore technical breakthroughs, knowing that longer-lasting products can reduce exploitation of the Earth's precious resources. Laboratory reliability test use rigorous testing methods to simulate module performance under real environmental conditions to assess whether it meets the expected quality and reliability:

- Electrical performance test: module performance test under standard illumination and low illumination conditions;
- Safety test: test on grounding, insulation, voltage withstand;
- Mechanical performance test: hail and impact performance test;
- Exposure and hot spot test;
- Environmental aging test: UV test, moist & heat test, moist & freezing test;
- Ammonia, salt spray test.

Innovation & Sustainable Development

In an innovation-driven PV industry, Trina Solar always focuses on developing leading-edge PV technologies and products with improved cell efficiency and reduced system cost. Trina Solar insists on technological innovation, and strives to transform the laboratory technology to commercial application as quickly as possible.

In 2019 and 2020, we continued to invest in product R&D. We have established long-term collaboration with the Singapore Solar Energy Research Institute, the Australian National University and other world-class R&D institutions to provide customers with efficient and environmentally friendly products and solutions. Trina Solar's State Key Laboratory of PV Science and Technology has set 20 world records in terms of conversion efficiency and output power of photovoltaic cells and modules. The 6-inch (with an area of 243.18cm^2) IBC full-rear side electrode solar cell independently developed by the laboratory has achieved efficiency of 25.04% (full area). It has been tested and certified by the Japanese third-party JET, and once again set a world record for IBC cell efficiency. We believe these innovations not only expand our product variety, but also greatly improve the efficiency of resource use and enhance environmental protection, thus promoting sustainable development.

In July 2020, to create a new collaborative and innovative ecosystem through open collaboration, synergizing the main resources of the industry chain and integrating core processes such as R&D, manufacturing and applications, we jointly initiated and established the 600W+ Photovoltaic Open Innovation Ecological Alliance with many upstream and downstream companies in the industry chain, including silicon wafers, cells, modules, trackers, inverters, raw materials and equipment manufacturers.

Product Stewardship Policy

Trina Solar is committed to protecting our employees, customers and communities in a responsible manner. We have put a Product Stewardship Policy in place to ensure product safety and environmental protection throughout the product life span, including R&D, manufacturing, transportation, use and end-of-life module disposal.

- Trina Solar conducts business in a manner that ensures compliance with all applicable regulatory requirements and industry standards. We are committed to integrating environment, health and safety responsibilities into all stages of our product life cycle.
- We believe that product stewardship, the ongoing performance improvement of products in terms of environmental, health and safety aspects, is one of the cornerstones of sustainable business. We act in a responsible manner to protect our employees, customers and the communities in which we operate.
- Trina Solar pledges to implement effective product stewardship management programs, and shows our commitment and leadership to meet the customers' increasing demands on safer and more environmentally sustainable products.
- Trina Solar actively strives to develop new raw materials and products in a responsible manner by assessing their risks for current and future generations. We commit to conflict-free materials and products, and work diligently to promote sustainable development by way of ethical and green sourcing.
- Trina Solar offers product guidance to customers, distributors and users so that our products are safely transported, stored and used. We voluntarily participate in takeback and recycling program for defective and/or end-of-life (EOL) solar.
- We pledge to actively engage in fighting against climate change by way of continuously enhancing energy efficiency and reducing GHG emissions.
- We pledge constantly to assess our global supply chains on the protection of human rights. That means prohibiting the employment of child labor and forced labor, including prison labor, contract labor, bonded labor, or other forms of forced labor.
- Trina Solar engages with stakeholders to periodically review the policy statement to ensure that it remains adequate and continues to meet stakeholders' expectations.

Recycling and Disposing of Scrapped PV modules

Many companies have not considered the problem of compliant disposal of scrapped PV modules which end product life cycle. As a responsible company, Trina Solar actively undertakes the responsibility to ensure compliant disposal of waste PV products. Trina Solar strictly abides by the e-waste management laws and regulations of the countries in which it operates, and proactively pushes for the recycling and reuse of waste electronic products.

Waste Electrical and Electronic Equipment Directive (WEEE, 2012/19/EU) specifies that manufacturers of electrical and electronic equipment must guarantee that waste products created in any EU member states must be recycled and reused, in order to ensure that electrical and electronic equipment, including PV modules, is properly managed by means of recycling, reusing, reclamation and regeneration. In 2012, for the first time, the Directive took PV modules and equipment into account. From February 1st, 2014 onwards, all photovoltaic manufacturers, distributors and installation contractors in Europe must fully abide by EU's rules on waste management, including providing necessary funds and administration. All PV products must be labeled with the same "wheelie bin" LOGO designed by WEEE.

The specific regulations and timetable are listing below:

•Phase I (as of August 14, 2015): Scrapped PV modules recycling rate reached 75%, reuse rate reached 65%;

•Phase II (as of August 15, 2018): Scrapped PV modules recycling rate reached 80%, reuse rate reached 75%;

•Phase III (from August 15, 2018): Scrapped PV modules recycling rate reached 85%, reuse rate reached 80%.

Trina Solar always focuses on extended producer and has become a part of the non-profit organization PV CYCLE (European Photovoltaic Module Take-back and Recycling Organization) founded in 2007. PV CYCLE is committed to centralizing and customizing services for the recycling of global waste photovoltaic products.

•In EU member countries: PV CYCLE has a network consisting of hundreds of certified recycling points, waste transport firms and dedicated recycling facilities. It provides solutions for sustainable PV modules and uses recycled materials for making new products.

•In other areas: PV CYCLE provides customized services, for example, whoever needs an international parcel service can inquire on PV CYCLE's website (www.pvcycle.com) or send an email to info@pvcycle.org.

Cooperated with Veolia and French Renewable Energy Union, PV Cycle built a PV module recycling plant in Roosset, south of France. The recycling plant was put into operation in 2018. The PV Recycling Plant uses robots to disassemble and sort PV modules. 95% of the materials can be disassembled, sorted, processed and recycled. Typical PV modules are made of 65-75% glass, 10-15% aluminum frame, 10% plastic and 3-5% silicon. The sorted materials are processed, packaged and sent to different industries. Among them, two-thirds of the glass is processed to become shattered glass, which is sent to the glass manufacturing industry. The aluminum frame is sent to the aluminum refinery. The waste plastic can be used as a fuel in cement plants. The recovered silicon can be used in the precious metal industry. Finally, the remaining cables and connectors are crushed and sold as copper beads.

Research breakthroughs in PV module recycling

Most of the valuable materials in PV modules, such as silicon, silver, copper and aluminum, can be recycled. The recycling of the materials saves resources and reduces energy consumption. As a leader in the PV industry, Trina Solar firmly believes that the recycling of scrapped PV modules has significant economic and environmental value. Progress made in the field includes:

•Development of a module disassembly device is undergoing prototype debugging.
•Development of backboard plastic material recycling is in the "separation + centrifugal system integration" phase.
•Experiment of recycling of solar cell (silicon) has been completed. The silicon powder purification experiment is in the processing.

Environment-friendly Operation

Trina Solar continues to adopt high-efficiency measures to utilize water resources and reduce wastewater emissions, exhaust gas emissions and solid waste and noise pollution during its production and operations. In order to ensure the realization of the company's sustainable goals and compliance operations, we have included detailed implementation and supervision procedures in our EHS management procedures. We have established complete management procedures for the identification and evaluation of environmental factors, the prevention and control of waste water pollution, the prevention and control of air pollution, the management of solid waste and noise, and chemicals, including the monitoring of the entire process. Changzhou headquarters and all factories guarantee continuous and effective recording and monitoring of our water points, drainage points, exhaust gas discharge and waste collection points every month.

The company has set up EHS management working group and authorized the person in charge to conduct regular inspections. This includes data monitoring, risk identification and diagnosis, and comprehensive water-saving measures and emissions reduction to reach defined targets. During the reporting period we continued to complete compliance of environmental laws and regulations, ensure that the group and all factories are safety on operation and transportation, no leakage of chemicals, fuels, including diesel during production.

Sustainable Use of Water

Efficient utilization of water resources has always been one of the important tasks of Trina Solar. We strive to optimize the operation of the production process and tracking performance data, continue to reduce the consumption of unit components of water resources. A lot of pure water and cooling water is used in the production process of PV modules. Based on our professional expertise in production and process control, we constantly innovate technologies of water use efficiency as we produce solar panels and cells. We have water saving goals for each factory and implement various water saving projects. The water we use comes from the Changjiang River, where we guarantee at each intake point there is no water issue for local residents. To carry out water conservation management, we set up water-saving goals for each workshop and implemented various water-saving projects, such as reuse of RO (Reverse Osmosis) rejected water, treatment and reuse of wastewater, collection of condensated water from air conditioning system etc. We set up a strict maintenance scheme to clean RO membrane to increase DI (De-ionized) water yield. With business expanding, total amount of water consumption is increasing. However, since we continue to implement water conservation projects, our water consumption per unit product has decreased since 2014.

2019 water consumption decreased per module production(MW)

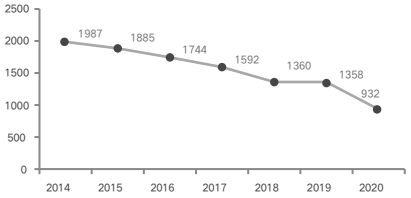
↓ 27.96%

2020 water consumption decreased per module production (MW)

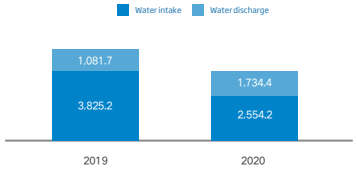
↓ 50.56%

*Compared with base year 2015

Water Consumption per Module Production (t/MW)



Total Amount of Water Intake and Water Discharge (10,000m³)



Measures Taken to Save Water

Reuse of RO Rejected Water

A lot of ultra-pure water is needed in the wafering and solar cell manufacturing processes. A lot of RO (Reverse Osmosis) rejected water is discharged from UPW (ultrapure water) plants. We collect those RO rejected water, and use it in those processes where high water quality is not required, such as pre-cleaning, alkaline cleaning, surface grinding, angle grinding in wafering workshops.

Wastewater reuse

Trina Solar worked together with Wuxi Depple Water Investment to build a new water recycling plant. The plant was built using advanced dual-membrane (ultrafiltration and reverse osmosis) technology to treat industrial wastewater generated from the manufacturing process. The treated water was directed back to Trina Solar as supplementary raw water supply.

Others

- Implementation of internal water recycling for wafer cleaning baths – water used in the post-cleaning bath was diverted and reused in the pre-cleaning bath.
- Collection of condensate water from the air conditioners and use it as supplementary water supply for cooling tower and emissions scrubber.
- Circulating water of vacuum pump as supplement water for cooling tower in cell workshop.
- Regularly clean RO (Reverse Osmosis) membrane so as to raise DI water yield and reduce RO rejected water.

During the reporting period, Suqian solar cell plant managed to save up to 150,000 tonnes of water and Yancheng plant up to 250,000 tonnes of water by reusing concentrated water. Yancheng plant saved 700 tonnes of water daily.

Wastewater Discharge

As a socially responsible company, Trina Solar strictly abides by the national Wastewater quality standards for discharge to municipal sewers (GB/T31962 – 2015) and emissions standard of pollutants for cell industry (GB30484-2013), and "Integrated wastewater discharge standard" (GB8978-2002) in planning and monitoring the production activities of all our Chinese factories. We ensure that wastewater is discharged into the urban sewage network after the required treatment to reach the required standard. The discharge water enters the urban sewage treatment plant for further treatment so that it does not affect surrounding water bodies. Since the factories were put into operation there have been no incidents of chemical leakage or excessive discharge of wastewater. We have made many technology innovations to achieve compliant wastewater discharge by exploring wastewater denitrification and the phosphorus removal treatment method.

Wastewater denitrification treatment

The manufacturing base of Trina Solar is located in Changzhou, Jiangsu Province, belonging to the Lake Tai basin - one of the most developed areas in China. To meet the stringent requirement of "zero" emission of nitrogen and phosphorus for projects within Taihu reserve regulated in Jiangsu Provincial Ordinance of Lake Taihu Water Pollution Prevention and Treatment, we have completed the wastewater denitrification update project in West Campus, East Campus and Northeast Campus. We successfully used the organic matter from wastewater generated in the wafer workshop as the necessary carbon source. We also used the small amount of phosphoric acid generated in the diffusion process as the phosphate source for biochemical nitration. Thereby, we achieved the goal of "treating waste with waste", and lowering the environment impact.

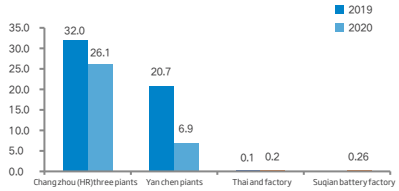
Reduction of Exhaust Gas Emission

Trina Solar includes comprehensive air pollution prevention and control management procedures in its EHS management in accordance with laws and regulations. We do not emit ozone-depleting substances (ODS) into the atmosphere. We have a number of measures to control the emissions of exhaust gas within the allowable range of national and local standards. Trina Solar has built a range of scrubbers, such as acidic/caustic scrubbers, organic scrubbers etc. to remove pollutants from air emissions according to relevant laws and regulations, to lower down the concentration of emissions and to avoid or lessen the hazards that arise from air pollution.

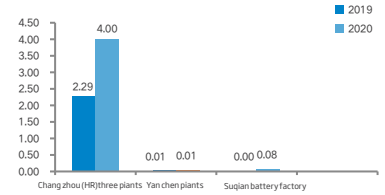
In order to meet the on-going stringent emissions requirement, the plants in headquarters, Changzhou invested 7.4 million RMB to upgrade the acidic scrubbers. Trina Solar engaged accredited third parties to carry out annual monitoring of air emissions from our exhausts and scrubbers. Results show that air emissions from exhaust and scrubbers are well below the limits of local standard and solar industrial standard.

Based on the different production processes, we monitor the main exhaust gas in different factories: the factories in Changzhou, Yancheng, Thailand and Vietnam mainly produce nitrogen oxides (NOx); while the processes at the Changzhou headquarters and the Yancheng factory produce sulfur oxides (SOx). At the same time, our Suqian solar cell factory, which began operating in 2020, has set up NOx and SOx emissions monitoring.

NOx emission (tonnes)



SOx emission (tonnes)



Solid Waste Management

Trina Solar adheres to several principles in managing waste: reduction, reuse and recycling to sort out and store it. We conduct high-precision and high-frequency quantitative monitoring and management over waste generated in the production process. The total amount of waste generated by factories in 2019 and 2020 is disclosed as follows categorized in solid waste and hazardous waste. Figures include the Changzhou headquarters, Yancheng factory, Thailand factory, Vietnam factory, Yiwu factory and the Suqian PV module factory and solar cell factory. The waste generated is classified and stored in accordance with the waste management system and handled by qualified third-party companies for disposal.

We take measures in stages including product design, production and packaging

Stage	Treatment measures
Design	Take waste minimization into consideration at product design stage. Substitute or minimize those toxic materials with less toxic or non-toxic materials.
Production	•Improve Waste Management Procedure. Categorize different wastes into general waste, resource waste and toxic waste, and manage them in different ways. •Setup and implement a recycle scheme for resource wastes, such as carton boxes, paper, plastics, metal scraps and woods. •Setup and implement an annual toxic waste disposal plan, and maintain a disposal inventory according to regulatory requirements. •Conduct environment awareness training for employees on waste minimization and segregation.
Packaging	•Use the recyclable materials for packaging. Under the condition of not jeopardizing product safety, try to use light-weighted materials.

2019 disposed solid waste

456,702 tonnes

2019 disposed hazardous waste

6,315 tonnes

2020 disposed solid waste

447,889 tonnes

2020 disposed hazardous waste

8,334 tonnes

Green Office

We believe that green office not only means minimizing the environmental impact of office activities, but also means creating an environment beneficial to the physical and mental health of employees so that they feel physically comfortable and are spiritually uplifted. We work to gradually incorporate the "green office" theme into the fine details of our work, to greatly reduce the impact of office activities on the environment. We are gradually reducing the use of hard copies of documents, and promoting the use of electronic documents. We established a video conference system, thus reducing the carbon emissions generated during travels. We installed a lamp switch for each cubicle to remind employees to turn off desk lamp when they leave their cubicle.

Biodiversity Management

When we consider developing new projects or expanding existing facilities, protecting the biodiversity of nature is our primary concern. Therefore, when planning new projects or power plants, we carry out environmental impact assessments in line with local environmental protection requirements. We assess the positive and negative impacts of the proposed project on the environment of the community, and protect the natural environment and biodiversity of the community where the proposed project is located.

To protect the natural environment we have carried out a number of complementary projects for agricultural solar projects and fishing solar projects. Without changing the original use of the land, the construction of power plants is conducive to the protection of the ecological environment and alleviating land-use conflicts. They also promote clean power, expanding the proportion of renewable energy in the power supply, and realizing two-way benefits. Our projects provide clean and green energy to the communities including:

•Trina Solar built a solar farm in Dorset, London. We set up bird houses and bat nests near the farm and planted local wildflowers while keeping the solar panels high without affecting the farm's continued grazing.

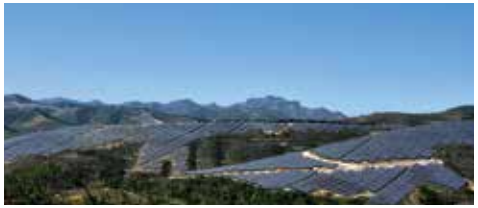
•Trina Solar built a 120MW 'PV plus fishery' project in Xiangshui, Jiangsu Province. The lower layer remains as aquaculture while the upper layer is PV panels, thus achieving sustainable economic, ecological and social benefits.

•Trina Solar successfully built a 5MW 'PV plus agriculture' project in Menghe, Changzhou. A greenhouse is constructed for ecological agriculture, where the roof is made of double-glass PV modules for clean power generation. The double-glass PV modules have strong permeability and thus keep the required illumination for the growth of crops.

•Trina Solar built a 51MW 'PV plus agriculture' project in the tea garden in Xishuangbanna, Yunnan. The transparent double-glass PV modules were used above the tea trees for efficient use of the space. The project generates about 80 million kWh/year clean solar energy, which reduces carbon emissions by 60,000 tonnes.

•In 2020, the 50MW agricultural solar complementary project was connected to the municipal grid in Lingshou, Shijiazhuang, Hebei. The project used the Trina Solar 210mm Vertex series ultra-high power modules. The layout provided sufficient space for farming, while effectively reducing costs. This project achieved economic benefits both for agriculture and power generation, and opened a new era of ultra-high power photovoltaic in agricultural application in China.

Our factories also reserve a certain percentage of land to benefit local biology distribution. We continuously improve the living environment and promote the development of biodiversity where factories are located through activities such as public events and environmental awareness training.



Waste land reuse: PV power project development

•Shanxi Yangquan 50MW leadership project

The project made use of indoor wasteland in coal mining subsidence areas, coal gangue hills, mining backfill areas, etc, to build a series of PV power plants. Sticking to the base's ethos of "photovoltaic power generation, ecological governance and waste land reuse" , the operation improved land use efficiency, provided green power resources and consolidated comprehensive land use issues in coal mining subsidence areas. In addition, the project solved the living problems of local farmers and ecological treatment problems, promoting local ecological and economic development.

•Anhui 170MW leadership project

We built floating power projects above the water surface of mining subsidence areas, which not only provided clean power and improved the renewable energy ratio, but also solved the comprehensive treatment of mining subsidence areas. The reuse of wasteland helped boost local farmers' incomes, adjusted industry structure in this city of coal, and added to local tax revenue, which in turn has promoted the development of the local photovoltaic-related industry chain.

Sustainable Purchasing

Our supply chain covers more than 80 procurement items, including raw materials, auxiliary materials, infrastructure, equipment, spare parts, packaging, logistics services, personal protective equipment, office suppliers, certification services, etc. We are well aware of the challenges and risks that are increasingly being influenced by the supply chain. We promote the continuous improvement of suppliers through supplier evaluation, audit and ability training to jointly build a sustainable development model.

2020 was an extraordinary year for China and the world, and the PV industry was not immune from the difficulties faced. At the beginning of the year, due to the impact of the COVID-19 pandemic, power plant construction had to be suspended. In the middle of the year, the industry generally faced a severe supply shortage of raw materials. However, we overcame the obstacles and delivered the power project to connect to the grid on time. We worked hand in hand with customers to ensure that every project with Trina Solar products selected was connected to the grid as scheduled, and strived to create value for customers. This has always been Trina Solar's paramount value, one that has customers at its center. Trina Solar and our customers share a responsibility to create and accelerate the popularization of clean energy toward a zero carbon future.

Sustainable Development of Supply Chain

We have established a complete EHS management procedure in the supplier selection, including environmental and social assessment to supervise and improve the performance of suppliers. The sustainable performance of our supply chain system has been built and improved by strict and holistic supplier assessment and full radar covered communications.

According to the requirements of production, the upstream and downstream supply chain mainly involves the procurement of EVA, backplanes, tin-coated tape, glass, silver and other materials. We have taken environmental and social impacts into account in the supplier selection process for buying these materials.

During the reporting period, there were zero labor force incidents from our operating site and suppliers.

Supplier Development

We have established a standardized supplier development process, which is divided into steps such as supplier investigation, supplier evaluation, and qualified supplier approval. The procurement, EHS, project department, and administration departments jointly decide on the selection and elimination of suppliers.

Supplier Selection Process

The Environmental and Social Assessment Principle in the Selection Process

We require suppliers to comply with ROHS principles and establish an environmental management system in line with ISO 14001, as well as an occupational health and safety management system in line with OHSAS 18001.

We review the supplier's documents including environmental permits (such as the complete acceptance of construction, pollutant discharge, water drainage and intake permit, environmental tax payment, hazardous waste disposal and transfer), occupational health documents, safety permits, fire protection, daily operation requirements, and social responsibility management goals, including carbon and energy indicators. We require suppliers to establish a complete business code of conduct and principles of ethics.

The suppliers need to undertake to stakeholders to sign an anti-corruption commitment.

The clause provides suppliers with transparent channels for complaints. Once suppliers discover that Trina Solar employees have violated business ethics, including bribery, extortion etc., they can report to Trina Solar's Ethics and Compliance Department.

Suppliers's CSR Assessment

We believe that periodic audits are an effective approach to promote suppliers' self-management. We carry out on-site audits on our key suppliers on a regular basis via document review, site inspection and employee interviews. In case of any problem encountered, we request the supplier rectify it within a reasonable time frame. In case of a major non-conformity during audit, Trina Solar will request the supplier to take corrective actions within a time frame. The supplier is also required to establish its management system and procedure to prevent the similar non-conformity from happening again. In the event that the supplier fails to fulfill our requirements, we may reduce the purchasing volume gradually or even disqualify the supplier permanently.

Supplier audit covers the followings:

•Business ethics: following ethical standards of fairness and honesty.

•Health and safety: having valid health and safety licenses, providing employees with a healthy and safe workplace, reducing accidents and injury as well as occupational health hazards.

•Environmental protection: having valid environmental protection licenses, complying with all relevant environmental protection requirements, and adopting environmentally responsible manufacturing processes;

•Elimination of discrimination: maintaining a workplace without discrimination, physical or verbal harassment.

•Prohibition of child labor, forced labor and labor abuse: prohibiting corporal punishment and forced labor, including use of prisoner labor, indentured labor, bonded labor, military labor or slave labor.

•Free association and collective negotiation: respecting employees' rights for joining, organizing or not joining labor unions.

Among the newly added suppliers in China, 15 suppliers underwent environmental impact assessments in 2019. 19 suppliers did so in 2020, meaning the number of suppliers receiving environmental impact assessments continues to rise.

Among the newly added suppliers in 2019, those that accepted the impact assessment of social principles accounted for about 4% of all suppliers. In 2020, the corresponding number was 5% of all suppliers. The number of suppliers who accept the impact assessment of social principles is also rising.

Supplier Procurement Framework "Legal Employment Commitment Letter"

The Seller promises and guarantees that the company and the employees, raw materials and components, and production processes and final products do not involve financial fraud, money laundering, corruption and bribery, terrorism, military use, child labor, forced labor, or sanctioned nations, regions, entities and personnel, all are in line with relevant laws and regulations of the UN. In case of any change to the above situation, the Seller should immediately inform the Buyer in writing. Upon receiving notice, learning about such change through other open channels, or finding that our statement is falsified, the Buyer has the right to immediately terminate the contract without assuming any responsibility. The Seller shall compensate for any loss sustained to the Buyer due to failure to fulfill the obligation of disclosure, misrepresentation or false statement.

Conflict-free Minerals

"Conflict minerals" refers to metal minerals such as tin, tantalum, tungsten, gold and cobalt mined in the Democratic Republic of Congo and its surrounding countries. The mining and sale of these metal minerals may produce serious human rights and environmental issues. Trina Solar highly focuses on the issue of conflict minerals and has established a conflict-free mineral policy, management system and management process, implemented ethical procurement to promote the sustainable development of the industrial chain, promotes supplier verification of conflict minerals, has issued a conflict minerals questionnaire to suppliers and formed the Annual Conflict Minerals Survey Report. The company has committed not to use such minerals.

Tin-plated copper tape is used in producing PV modules. When we use three materials involving tin-coated tape, junction boxes and terminals, and lead-free tin wire, we need suppliers to trace the origin of the minerals. Trina Solar has taken active actions since we realized that conflict minerals may enter our supply chain.

•Formulate formal conflict mineral management policy;

•Establish management system and conduct conflict mineral survey for supply chain;

•Organize conflict mineral training for key suppliers;

•Inquire all suppliers to sign formal agreement to promise no conflict mineral in their products.

Collaboration with Suppliers

Trina Solar not only pays attention to its own green development, but also takes initiative to convey its vision and goal of sustainable development to its global partners. Trina Solar is committed to working with global partners to gather ideas and contribute inspiration and innovative solutions for the sustainable development of the photovoltaic industry.

Trina Solar conducts audits on suppliers once a year in accordance with AEO certification standards to ensure the safety of the import and export trade customs clearance process. The World Customs Organization defines AEO Authorized Economic Operator as formulated in the Global Trade Security and Convenience Standard Framework as those who: "Participate in the international circulation of goods in any way and (are) the party identified as meeting the safety standards of the World Customs Organization or the corresponding supply chain, including manufacturers, importers, exporters, customs brokers, carriers, forwarder agents, intermediaries, ports and airports, cargo terminal operators, general operators, warehousing operators and distributors". A new article 13 was added to the import and export cargo transportation and customs clearance agency agreement regarding supplier responsibility that says the supplier promises to fully act in accordance with the AEO certification standards provided, focusing on complying with laws and regulations and trade safety, and in line with the certification standard optimize and improve trade security management.

Trina Solar and TPG Group's Rise Fund signed a project contract with a total transaction value of approximately US$700 million

On July 1, 2020, Trina Solar announced the transaction of nearly 1 GW solar PV projects portfolio in Europe and Latin America to The Rise Fund, a global impact investing fund managed by TPG. Trina Solar will provide project development, design, procurement and EPCM services of these projects to TPG. The total amount of the transaction is around $700 million.

The solar PV projects included in the transaction are currently operational, under construction or in late stage development nearing ready-to-build status across Spain, Chile, Colombia, and Mexico. Based on different timing of reaching the status of being ready to build for each project, the total portfolio is expected to be delivered by the end of 2022.

TPG is one of the largest alternative asset firms with more than $79 billion assets under management worldwide. Ed Beckley, a Partner at TPG who leads the Firm's infrastructure investing efforts said, "We are very excited to partner with Trina Solar, who has a history of developing world-class solar PV projects in key markets. TPG and The Rise Fund look forward to making joint efforts together with Trina Solar to accelerate positive environmental impact starting from this 1GW of clean energy generation."

"It is our great honor to accomplish this milestone partnership with TPG and its Rise Fund. The transaction has manifested and reinforced our market leadership in the field of overseas solar project development," said Gao Jifan, Chairman and CEO of Trina Solar. "We have established very talented and vigorous local teams in each of our regional markets and have built significant volume of project pipeline in the international market. We will continue to collaborate with world's leading partners to combat climate change together and benefit international communities with solar energy."

A strategic cooperation agreement with suppliers

On November 4, 2020, the 12th China (Wuxi) International New Energy Conference and Exhibition opened. Trina Solar Co., Ltd., Sineng Electric Co., Ltd. and Risheng Energy Co., Ltd. signed a strategic cooperation agreement concerning "600W+Ultra-high-power modules". The signatories agreed to strengthen technical exchanges in product and system adaptation and carry out in-depth collaboration and corresponding technical research and product development on "ultra-high-power photovoltaic modules". The action promotes technological innovations in the photovoltaic industry and encourages the ultra-high power module industry to be standardized. In addition, it will integrate the resources of global market promotion, expand the influence and the application scope of advanced technologies in the photovoltaic industry.

Affected by the pandemic, the 2020 Trina Solar Global Supplier Conference was held in the online form of live broadcast for the first time, with the theme of "Building a New Development Pattern and Achieving Mutual Benefit and Win-win". It was held in the Trina Solar Vision and Innovation Exhibition Center. More than 500 suppliers from all over the world took part online. Gao Jifan, Chairman and CEO of Trina Solar, spoke of developments in the photovoltaic industry, the company's strategy and brand positioning, and of prospects for collaboration with all participating supplier representatives. Trina Solar has always adhered to the principle of "customer-centric, adherence to open innovation, long-term hard work, the full pursuit of excellence, shared responsibility and co-creation and sharing", he said, as well as transparency, visualization, digitization and standardized procurement and multi-dimensional collaboration with partners. The Supplier Conference established four awards: Excellent Supplier, Joint Innovation, Best Collaboration, and Excellent Quality, commending suppliers who have had long-term strategic collaboration with Trina Solar.

Collaboration with Tongwei Group

On November 17, 2020, Trina Solar Co., Ltd. announced that its cooperation with Tongwei Co., Ltd. has reached a new level. The cooperation involves three investments and a long-term procurement cooperation framework agreement. Gao Jifan, Chairman of Trina Solar, said that the two leading companies focused on 210 products and cooperated to make the 210 industrial ecosystem stronger and bigger. Joint ventures and cooperation among strong players, who complement each other, have bigger advantages than simple vertical integrations within themselves.

In terms of investments, Trina Solar signed a "joint venture agreement" with Tongwei's Sichuan Yongxiang Co., Ltd. and Tongwei Solar Co., Ltd. respectively, to jointly establish a project company and jointly invest in a high-purity crystalline silicon project with an annual output of 40,000 tonnes, an ingot project of an annual output of 15GW, a wafer cutting project of an annual output of 15GW, and a high-efficiency crystalline silicon cell project with an annual output of 15GW. The total investment is about 15 billion RMB. Trina Solar's shareholding ratio in each project company is 35%.

These major project investments were part of Trina Solar's strategic development plan. Trina Solar and Tongwei both have outstanding advantages in their roles for the industrial chain. They have reached the consensus on 210 series modules, and these cooperations will further strengthen their strategic partnership. Through joint efforts of all industry partners, the 210 product industry chain has matured, which is now more conducive for deeper integration.

Care For Employees

- Sustainable Development of Talent
- Employees' Rights
- Occupational Health and Safety
- Employees' Health
- Listening to Employees' Views

Sustainable Development of Talent

Trina Solar regards talent as the force for our sustainable development. We have adopted the flexible talent management mechanism as the significant driving core for energy output, and endeavor to build a vital talent eco-system, and attentively innovate to allow employees to have a healthier and highly efficient working environment. By investing resources in employees' career development, physical and mental health and cultural interaction, we know that we have a diversified and synergized team to create and win together as the company grows. We fiercely adhere to a talent management strategy, attracting and retaining highly skilled people by focusing on performance management, training, education, competitive remuneration and highly efficient talent incentive mechanisms, ensuring that employees fully play their roles. We are committed to providing a globalized development platform for our employees and to give them space to work and study. We are keen to help them become more excellent all-round individuals.

Diversified and Fair Employment Environment

Trina Solar's employees come from 40 countries and regions. We strictly adhere to relevant international conventions, local laws and regulations, to ensure gender equality and prohibit employment discrimination. On the basis of promoting diversity and fair employment for male and female employees, the proportion of female employees in Trina Solar remains stable over the past three years. We encourage and promote employee localization, implement local employment, help relieve local employment pressure, and provide a number of employment opportunities and talent trainings. Moreover, local employees' cultural interaction helps us better understand local commercial atmospheres and culture abroad. Distribution structure of employees (by gender, nationality and percentage of local employees assuming offices in the management [director and above]):

- Gender Distribution

Female 36.4%
Male 63.6%

Female 35.2%
Male 64.8%

- Nationality Distribution

Foreign Employee 16.8%
Chinese Employee 83.2%

Foreign Employee 15.2%
Chinese Employee 84.8%

- Senior Management Twam Distribution (China)

Foreign Employee 4.9%
Local Employee 95.1%

Foreign Emloyee 4.6%
Local Employee 95.5%

- Senior Management Team Distribution (Abroad)

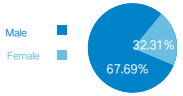
Foreign Emloyee 9.5%
Local Employee 90.5%

Foreign Emloyee 5.4%
Local Employee 94.6%

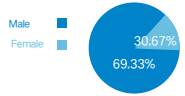
We recruit employees through Internet and campus-oriented channels. Moreover, we cooperate with domestic and overseas colleges, establish professional training courses, and organize Trina Solar exclusive job fairs.

In 2020, the proportion of local employees in the senior management level remained stable. Local senior executives in China accounted for 95.45%, of which 25.0% were female; local senior executives in overseas accounted for 94.59%, and female accounted for 13.51%. In 2019, male accounted for 67.69% of new employees and 32.31% of female; in 2020, male accounted for 69.33% of new employees and 30.67% of female.

2019 Recruitment Ratio



2020 Recruitment Ratio



High-end Talent Training Model

We continuously increase the input in the education training and cultural construction, continuously improve the all-employee training system, enrich training modes and content, and build the atmosphere for talent. The group has also established its own tertiary institution, Trina University. Since it was founded three years ago, it has provided knowledge input and energization for Trina's staff and its partners and clients. Trina University has 10 different types of professional classrooms and open spaces in order to meet different learning and communication needs. Trina University has six colleges: Leadership Institute, Business School, Photovoltaic Institute, Future College, Energy IoT Academy, and International College.

- Positioning of Trina University

Strategic implementation
Performance improvement
Capability development
Cultural construction

- Objective of Learning

Active learning
Daring to practice
Good at summarizing
Willing to share

Comprehensive and Diversified Training Systems

Our training covers several sectors, such as safety, skills and human rights policy. Training is conducted online or offline, helping employees choose specific training modes according to their needs, including in growth and promotion. The offline classes cover the energization experience of the employees at different levels, specifically including: soft strength improvement such as echelon talent and star light and cradle training programs, pressure and emotion management, IQ management, new manager growth courses and industrial ability improvement courses, for example, leading energy internet technology. An improved training system provides employees with dynamic growth space. The following gives an insight into the schedules and activities of training for employees in all domestic factories and operating organizations.

2019 Total training hours

7,498 h

2020 Total training hours

21,535 h

2019 Annual average training hours for employees

2.5 h

2020 Annual average training hours for employees

3 h

	2019	2020
Skills training	5,604h	19,433h
Human rights policy training	352h	373h
Safety training	1,542h	1,729h

Employees' Motivation and Performance Management

Trina Solar has established an effective performance management mechanism. Employees are required to set personal development plan (PDP) every half year and their leaders will evaluate and rate their performances. PDP is composed of three aspects of appraisal, including business objectives and key tasks, employee management objectives and personal development goals to achieve balance among individual growth, team development and organizational goals. Employees who enter the company can make their choices to take a technical or a managerial position for career development.

In 2019, 4,986 people from Trina Solar global management team were evaluated for performance. In 2020, the evaluation has been increased to 5,397 people; 100% non-management people were evaluated for performance.

Employees' awards	Demonstration of activity details
Excellent Employee Award	In 2019, 114 employees were awarded as excellent employees. In 2020, 138 employees were awarded as excellent employees.
Excellent Team Award	In 2019, 15 teams were awarded as excellent teams. In 2020, 18 teams were awarded as excellent teams.

The 2019 Looking for Trina Star project covered all businesses and functions of the company

Employees' Rights

Improving the sense of belonging and happiness of employees is a key concern for Trina Solar. We continuously raise employees' salary and improve the welfare guarantee system, and enhance employees' satisfaction in respect of health insurance, allowance welfare, work-life balance, learning and growth, living care and holidays. The group is committed to fostering an outstanding team of talent and strictly abiding by domestic laws and regulations such as the Labor Law and the Labor Contract Law of the PRC and local applicable laws and regulations abroad. We strictly prohibit the use of child labor or young labor (under 18 years old) in dangerous work.

I · International conventions on human rights and labor standards

- To comply with international conventions on human rights and labor standards and to be an attractive and legitimate employer.
- We respect employees' rights to exercise freedom of association and collective bargaining and establish labor union organizations in every plant at home and abroad.

II · Open, fair and equal recruitment policy

- Actively promote the harmony and stability of labor relations, never interfere with employees' freedom of belief or discriminate against any employee on the basis of nationality, ethnicity, religion, gender, age, disability or marital status.
- No instances of discrimination related to gender and health status were reported in Trina Solar during its operation in this disclosure period.

III · Health insurance

- Provide all employees with pension, insurance for work-related injuries, unemployment, medical care, maternity, housing provident funds, physical examination and supplementary commercial insurance. The supplementary combined commercial insurance covers supplementary medical treatment, accidental injury, serious illness, term life insurance and business travel insurance, and part of the protection covers employees' family members, providing supplementary security for employees and their family member.

IV · Vacation benefits

- Formulate the regulation of "Management of Paid Leave" to allow employees to take public holidays, annual leave, sick leave, lactation leave, maternity leave, accompanying leave and other holidays. In addition, employees have an extra paid health day as a flexible holiday.

V · Allowances and welfare

- Provide all kinds of allowances and benefits for employees, such as housing allowance, annual merit allowance, communication allowance, foreign office allowance, assignment allowance, travel allowance, health expenses, marriage gift, etc. Working meals and working buses are provided for employees, too.

VI · Employee rights

- Comply with local laws in the region where our factories or offices are located, implement equal pay for equal work for male and female employees. No child labor. In the process of production or service provision, it is forbidden to use forced, debt paying or contract labor, and it is absolutely forbidden to use all forms of forced and compulsory labor. No forced labor event was reported in Trina Solar during its operation in this disclosure period.

Trina Solar encourage employees to be struggle value oriented with remuneration policies. We have improved remuneration policies to ensure that our employees' compensation is higher than the lowest level of the regions our plants/offices located in. By connecting employees' remuneration with their personal performance, value group performance and corporate performance, we can effectively attract, encourage and retain those outperforming employees and support Trina Solar's high speed development and global expansion strategy. The performance evaluation system can ensure that employees' remuneration is paid based on the reasonable references.

Trina Solar conveys information about operational changes to employees in a timely manner through the labor union, internal communication mechanism, etc.

In 2019 and 2020, Trina Solar committed to covering 100% of its employees with medical insurance and commercial insurance. In China, 1,890 managerial personnel were arranged to take a physical examination (1,560 participated as result) in 2020. The occupational disease examination covers 100% of positions which involve occupational hazard factors, including pre-employment physical examination, annual physical examination and pre-employment physical examination. In 2019, there were 141 and 170 employees enjoying maternity leave and paternity leave. 135 employees returned to work after maternity leave with the rate of 96%. In 2020, there were 98 and 101 employees taking maternity leave and paternity leave. 92 employees returned to work after maternity leave with the rate of 94%.

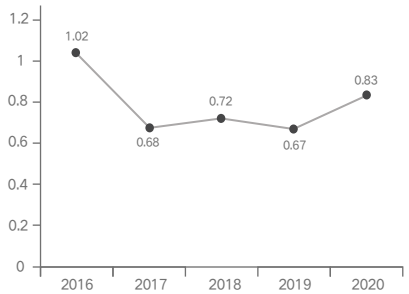
Occupational Health and Safety

We care about employees' growth and development and treasure their hard work and contributions. We promote their improvement and encourage them to innovate by training, education, performance management and incentive awards. The employees' safety and health is the foundation of our business. We integrate occupational health and safety (OH&S) management requirements into every aspect of the company's operation management. We are committed to creating a safe, healthy and environmentally friendly workplace for our employees, helping them enjoy a better quality of life, and allowing them to grow and develop together with Trina Solar.

Occupational Health and Safety Management System

We believe that a sound OH&S management system can continuously help us improve OH&S performance. Both domestic and overseas plants, have established OH&S Management System -ISO45001. We implement OH&S improvement programs in every stage, including plant design, construction, research and development, manufacturing and packaging. We do our utmost to protect the health and safety of our employees, contractors, customers and other stakeholders. While providing clean energy products to the world, Trina Solar is committed to creating a safe, healthy and environmentally friendly workplace for its employees. Employees are our greatest asset. We have put EHS management procedure in place to ensure that all incidents/accidents occurring in the factories or BUs are investigated and communicated promptly. Effective and practical remedial measures are taken to prevent recurrence. The responsible managers are liable for any serious accidents occurred, so as to promote their self-management and self-improvement.

Trina Solar's Total Recordable Rate (TRR)



Safety in the Workplace

Trina Solar is committed to creating and maintaining a safe and healthy workplace for all our employees and contractors. We aim to minimize the risk of occupational injury in the workplace and improve our occupational health and safety performance through all-around risk identification and risk control. In 2019 and 2020, the company conducted the safe production month activities by means of an EHS knowledge competition, fire evacuation drill and first-aid knowledge training to improve employees' awareness of safe production.

We have formulated the Procedures for Identification of Risk Sources and Risk Evaluation based on what we identify as risk sources relating to Trina Solar's production, products, services and evaluate their risks annually. Control measures such as elimination/replacement, engineering control, management measures, PPE are taken to reduce risks. We are also continuously improving the emergency management mechanism and conducting emergency response drills.

First-aid training

Traffic safety courses

Tagging and locking-out training

Training on use of fire extinguishers

Links	Safety and occupational health management
Identifying risk	• Identification of risk sources and risk evaluation: We identify all risk sources relating to Trina Solar's production products and services and evaluate their risks annually. We classify the risks arising in the workplace in three levels: critical, moderate and general. Different control measures are taken for each level to continuously lower and control risks. • Safety checks: We believe that a production process, even if it is safe, will be accompanied by unsafe elements. So for the purpose of reducing accidents, we have formulated the EHS Check Management Procedures, and continuously identify any unsafe acts and unsafe circumstance that exists in the workplace through comprehensive safety checks and external third-party audit to eliminate potential problems, reduce risk and make Trina Solar a safer working place. • Reporting of potential safety problems: Trina Solar is committed to establishing an open and effective reporting mechanism, encouraging correct behavior, practices and work flow to minimize the risk of accidents and personal injury. Employees are encouraged to report potential problems through channels such as completing an EHS hidden report form, submitting E-flow EHS potential safety problem report and treatment flow, writing an email, or making an EHS emergency call. • Monitoring of occupational hazard elements: We constantly monitor occupational hazards in the workplace in line with applicable laws and regulations and take engineering and management measures to ensure to provide a healthy working environment for employees.
Risk control	• Safe production responsibility system: Based on the principle of "those who are in charge shall bear responsibilities" and "double responsibilities for one post", safe production responsibility letters are signed level by level, thus ensuring that safety awareness and safety prevention measures are implemented by individual departments and levels. • EHS training: We conduct a wide range of EHS training for employees, contractors and suppliers, such as for new employees, post training and special safety training (chemicals, electricity and fire safety, etc), making employees and contractors aware of potential safety issues in the workplace, prevention measures and their responsibilities. • Management of hazardous work: To ensure work safety of our contractors and employees, we have an area working permit system in place, and all contractors and employees are required to obtain the appropriate operational permit before work begins. We strictly control hazardous work such as that in elevated places, confined spaces, or that involves fire that poses serious risks to persons or property. Those in charge of the projects are required to complete a hazardous-work permit and begin work only after obtaining approval from management and ensuring that all preventive measures are taken. • Management of chemicals: We strictly comply with international and local laws and regulations, and do not use prohibited or restricted chemicals. The Procedures for Management of Chemicals are formulated to ensure that the processes from introduction, purchase, storage, use and disposition of chemicals are rigorously supervised and are subject to risk control. • MOC (management of changes): This is a very effective means of guaranteeing operational integration and preventing significant accidents. Under the EHS Change Management Procedure, any changes in processes, equipment, technology and materials that may affect employees, the environment, safety and product quality are required to be in line with the change management regulations. Such changes may be implemented only after being approved by the appropriate authorities. • Occupational health risk announcement: An occupational health hazard announcement card is made available in the workplace, alerting employees about potential occupational hazards and preventive measures and improving employees' awareness of measures to remain safe. • Occupational medical examination: We arrange annual occupational medical examinations for all employees exposed to occupational hazards and in a timely manner adjust duties for those suffering from occupational contraindications. All employees in the manufacturing base received a medical examination in 2019-2020.
Managing emergencies	• Establish emergency management mechanism: We believe that effective emergency plans and periodic drills play a vital role in stabilizing post-incident situations. Therefore, we have formulated comprehensive emergency response plans based on the identified major and moderate risks, including fires, chemical leakage, burns and power outages, etc, to ensure timely and effective response to various safety and environmental incidents. We organize periodic emergency drills for each area to enhance our response capabilities and ensure that our emergency response plans are effective. We regularly carry out fire evacuation drills in conjunction with local fire authorities to ensure our emergency response plans are effective. • Green channel for medical care: Trina Solar coordinates with local hospitals to have an unimpeded channel for medical care for employees injured at work. Such employees can receive immediate medical care by presenting the Trina Solar Employee Assistance Green Channel Card to the hospital, and Trina Solar will advance all medical expenses, ensuring worry-free recuperation.

Employees' Health

While creating business value, Trina Solar continuously pays attention to employees' mental and physical health. We strive to create an efficient, relaxed and caring work environment for our employees, helping them make a good balance between work and life. Trina Solar organizes rich cultural activities to enhance team cohesion, reduce psychological pressures, release negative emotions and enrich employees spiritually so as to improve their engagement and general wellbeing.

The company hosts activities to provide a workplace and spiritual space for its employees. During the 2019 annual meeting, we organized a garden party for employees' families, inviting them to visit the company and join in a series of interactive activities. We are well aware that the support of employees' family members is a key motivation for employees to move forward. In addition, the company has established a series of sports and hobby clubs, such as soccer, basketball, badminton, table tennis, swimming and fishing. We hold various sports competitions every year to cater to employees with different interests. Trina Solar persists in conducting parents-children activities to benefit children's physical and mental health, such as Trina children summer camp, art training class, painting and calligraphy show, parent-child reading club, Mother's Day activities, etc. The activities are both fun and entertaining. The activities not only help promote emotional communication between parents and children, but also allow employees pay more attention to their children's healthy growth. We also provide travel opportunities for employees to facilitate exchanges across platforms and among different business units, at the same time enhancing organizational vitality.

The Workspace is Also a Spiritual Home

In order to popularize local cultures and enrich employees' cultural life outside of work, we prepare various activities to celebrate local traditional festivals. Moreover, during the report release period, we held a variety of festive activities with Chinese and Western cultural themes, such as Women's Day, Youth Day, Mother's Day, Children's Day, Father's Day, Dragon Boat Festival, Mid-Autumn Festival, National Day, Christmas in addition to other online and offline celebrations.

In order to build a healthy community, the company organizes classes such as yoga and moxibustion, as well as summer camps, art classes and book sharing activities for employees' children. On August 7, 2020, the company held a free moxibustion program for employees, to introduce the health effects of mugwort and allow employees to experience it. The event, named "Spread Love with Moxibustion", was designed as a reward for charity activities.

• Book Day

• Free moxibustion experience

• Art class

• Yoga class

• Family day

• Memory of childhood

Listening to Employees' Views

We value the communication and participation of employees, and encourage them to join the Labor Union. We have established a variety of efficient and transparent communication channels within the company to build multi-channel and multi-level employee communication, to encourage employees to voice their ideas and suggestions to management, and establish a culture of communication in which various views are equally respected. We respond to the questions raised by employees and try to resolve them promptly. For the problems that cannot be resolved temporarily, we will acknowledge the problems and admit that the company will try to find a way to address them, so as to win employees' recognition and forgiveness.

Trina Solar's employees can choose their own welfare items for themselves and their families according to their own needs, such as telephone-doctor, physical examination, critical illness insurance, accident insurance and other self-paying programs, to meet their different hearth-care needs. Employees are given their own decision-making rights to guarantee their welfare so that they can fully be engaged in enjoyment of work and life.

Throughout its more than 20 years development, Trina Solar has come to understand that apart from creating profits and value for shareholders and employees, companies have another important responsibility - for consumers and society. Trina Solar's development is inseparable from the support and recognition of customers, partners and people from all walks of life. We always aim to stay true to our original mission and fulfill our social responsibilities. Contributing to society is an extension of the corporate citizenship concept and is in line with our long-term interests and the needs of social development. Bearing in mind the principle of "teaching one to fish is better than giving one a fish", Trina Solar draws on its core technology advantages and reliable product applications to support the construction and development of communities, improve local infrastructure and achieve multiple results in terms of PV poverty alleviation, ecological protection and social and economic benefits. We also provide financial support in the forms of education funding and entrepreneurship funding to alleviate local poverty, and promote children and community education.

Contributing to Society

- Education and Entrepreneurship
- Charity
- Photovoltaic Poverty Alleviation

Education and Entrepreneurship

One of the cores of the sustainable and comprehensive development of society is the quality of education for all. Trina Solar upgrades innovative technologies of green technology and improves educational facilities in impoverished areas through educational donations and the establishment of entrepreneurial funds. Knowing that the industrial technology revolution requires continuous breakthroughs in basic technology research and development, Trina Solar set up the State Key Laboratory of Photovoltaic Science and Technology, the New Energy Internet of Things Industry Innovation Center and the National Enterprise Technology Center in its headquarters. Their research in cutting-edge technology has always been at the leading level in the industry, and constantly generating technological output in the development of green energy.

In 2018, Trina Solar's Siyuan Sunshine Fund donated a cultural center to Qunyi village in Xinren township, Qianxi county, Guizhou, which was officially completed in December 2019, benefiting more than 20,000 people in the surrounding area and creating more jobs there.

In July 2019, Trina Solar took part in the World on Wheels charity event in India by renovating a bus roof to install solar modules to power on-board computers, thus popularizing computer knowledge for remote rural children in India.

Trina Solar Frontier Science Foundation provides funds to Nanjing University

In October 2020, Trina Solar donated 1 million RMB to Nanjing University to establish the Trina Solar Frontier Science Fund. It aimed to support international academic research and university-enterprise innovation collaboration in the School of Chemistry and Chemical Engineering of Nanjing University and helped the school to invite internationally renowned academic experts to carry out academic exchanges and seminars in the field of new energy. With the rapid development of industrial technology, the collaboration between enterprises and universities must be closer, and the scientific research of universities should be closely integrated with the needs of enterprises for industrial development, the mutual joint development and continuous improvement should be made. Trina Solar has established a good partnership with Nanjing University. We look forward to working together with alumni and people from all walks of life to create a bright future.

Charity

Trina Solar's combination of poverty alleviation and clean energy popularization to achieve targeted poverty alleviation is one of the main ways for Trina to fulfill its corporate social responsibilities. We carried out public welfare activities with our core technologies and product advantages. Practicing social welfare for nearly a decade, we have poverty alleviation projects in many provinces and cities such as Gansu, Jiangsu, Xinjiang, Henan, and other countries or regions such as Nepal, India and Tanzania by donating money, modules and power plants. For example, Trina Solar's poverty alleviation power plant projects in five counties in Chenzhou, Hunan province, help poor households earn money and help poor counties to shake off poverty. Among them, the 8,400kW poverty alleviation project in Rucheng county has enabled each poor village to steadily increase its collective income by more than 50,000 RMB a year, making outstanding contributions to the county's success in lifting itself out of poverty.

100kW PV system donated to Sitagu Ayudana General Charity Hospital in Myanmar

According to figures released by the International Energy Agency at the end of 2013, there are still more than 200 million people in India and more than half of those in Myanmar are in a situation where electricity is not available. The reason is the construction of infrastructure such as power plants and transmission lines in these countries cannot keep up with the needs of social and economic development. Sitagu Ayudana Hospital, a general charity hospital in Sagaing, a city in central Myanmar, was established in 1989 to provide medical assistance to poor residents in remote areas. The infrastructure of the area where the hospital is located is weak and the power supply is insufficient, which has caused great troubles to the normal operation of the hospital. In November 2020, Trina Solar donated a 100kW photovoltaic power generation system to the hospital, which alleviated the hospital's power shortage problem, and reduced the hospital's electricity costs, allowing it to invest in more medical projects and medical services that benefit local residents.

During the report released period Trina Solar ran many philanthropic donation projects worldwide, making a social and economic impact on local communities with green energy.

Time	Charity projects
May 2019	A 6kw residential PV system donated to an Australian children's hospital.
June 2019	Sixty modules (17,700W) donated to Grid Alternatives, a non-profit organization in the United States.
July 2019	We took part in the World on Wheels charity event in India by renovating a bus roof to install solar modules to power the PC computers on board, thus popularizing computer knowledge for remote rural children in India.
June 2020	We donated to Suqian Charity Federation for poverty alleviation.
June 2020	Zhengjue Temple energy storage micro-grid system (200kW solar power + 250kWh energy storage micro-grid), 32 pieces of 285-290 modules.
June 2020	We donated 83 modules to PCYC, an Australian non-profit organization, for PV rooftop construction.
October 2020	Residential photovoltaic poverty alleviation project in Fengning county: We built a 92,000-yuan village level power plant for the villages of Gaogazi and Heiniushan in Yangmujiazi township, for residential rooftop PV power plants; 13 households in Heiheizui township, 10 households in Tanghe township, 10 households in Humaying township, 10 households in Xiaobazi township; a total of 43 households; 12,000 RMB per household.

Photovoltaic Poverty Alleviation

As one of the top 10 targeted poverty alleviation projects in China, photovoltaic poverty alleviation plays an irreplaceable role in fighting against poverty. Drawing on the advantages of solar energy, it has not only developed green and clean energy but also achieved precise and pragmatic poverty alleviation, delivering multiple ecological, social and economic benefits. As a leader in the photovoltaic industry, Trina Solar has responded to the national call for targeted poverty alleviation and industrial poverty alleviation. With its strong technical strength and reliable product applications, Trina Solar has carried out in-depth photovoltaic poverty alleviation by building village power plants, large scale centralized power plants, residential rooftop PV power plants and other projects. In October 2020, a residential photovoltaic poverty alleviation project was launched in Fengning county. We built a 92,000-yuan village level power plant for the villages of Gaogazi and Heiniushan in Yangmujiazi township, for residential rooftop PV project construction photovoltaic, including 13 households in Heiheizui township, 10 households in Tanghe township, 10 households in Humaying township, 10 households in Xiaobazi township with a total of 43 households, 12,000 RMB per household.

On May 6, 2020, China Central Television reported on Trina Solar's construction of photovoltaic power plants for poverty alleviation in Yajiang county, Ganzi prefecture, Sichuan province. We used high-efficiency monocrystalline half-cut modules to lift local poor villages out of poverty, helping villagers gain collective economic dividends and earn stable income.

The China Siyuan Project Poverty Alleviation Foundation awarded Trina Solar the honorary title of Poverty Alleviation Loving Group at the 2020 Poverty Alleviation Summary Commendation Conference to recognize its outstanding contributions in supporting employment and entrepreneurship, improving the quality of education for poor students in western China.

In response to the outbreak of COVID-19 in 2020, Trina Solar mobilized its global resources to purchase medical supplies for targeted donations, and donated to Japan, the Maldives and Spain when the pandemic spread overseas.

Responding to COVID-19

- Charities and Donations
- Internal Emergency Response Mechanism
- Employee Care

Charities and Donations

At the height of the pandemic, Trina Solar's Siyuan Sunshine Fund donated 200,000 RMB to Yijun County Traditional Chinese Medicine Hospital in Shaanxi province for pandamic prevention and treatment work. Meanwhile, it donated pandemic prevention and treatment supplies, including medical masks, goggles, protective clothing, respirators, gas masks and medical gloves, to the Jiangsu Commission of Health, Nanjing Drum Tower Hospital, Jiangsu Province Hospital, Changzhou Third People's Hospital, Yancheng No. 1 People's Hospital, Xiantao First People's Hospital, Shanghai Fifth People's Hospital, Fudan University, Huashan Hospital affiliated to Fudan University and Nanjing Second Hospital.

> **Trina Solar's medical donation supports concerned group to fight against the pandemic donated.**

Since the outbreak of the pandemic, Trina Solar paid close attention to pandemic developments. On learning of the shortage of medical supplies in designated hospitals in various cites, Gao Jifan, chairman of Trina Solar, immediately organized the company's global resources mobilization, utilized its global network and regional office resources to purchase anti-pandemic supplies from inside and outside China. Especially at the beginning of the pandemic it was extremely difficult to procure globally medical supplies because of a shortage of materials and obstacles in cargo handling, customs clearance and freight logistics. Thanks to our experienced operation capability around the world for more than 20 years, our procurement, logistics, customs, finance and capital departments, as well as regional business head were able to coordinate with each other and react quickly. Members of Trina Solar's "Anti-COVID-19 Task Force" worked around the clock to coordinate with regional teams in Europe, Latin America and the Asia-Pacific region. At the same time they communicated closely with frontline medical workers to ensure that the most needed goods were guaranteed and delivered. During the pandemic, transport capacity was stretched. In order to ensure supplies were transported to the front line as rapidly as possibly, the task force mobilized the company's logistics resources and worked with the courier firm SF to bring back Trina Solar's non-invasive ventilators from 70 trucks in total with 30 tonnes load capacity per truck overnight, after learning that SF's logistics was stalled in many places. Thanks to the great efforts of Trina Solar and its teams, the first batch of supplies, including non-invasive ventilators, medical protective clothing, goggles, gas masks, medical surgical masks, medical surgical gloves and KF94 masks, were sent to medical teams from Jiangsu, Huashan Hospital affiliated to Fudan University, Shanghai Fifth People's Hospital, as well as designated hospitals in Nanjing, Changzhou, Yancheng and Suqian with the help of Jiangsu Charity Federation.

Internal Emergency Response Mechanism

Facing the pandemic, Trina Solar set up an emergency response task force for pandemic prevention and monitoring, as well as multi-level pandemic prevention working groups for command, government interface, employee pandemic prevention and control, prevention and control mechanism supervision, supplies, logistics support/administrative pandemic prevention, pandemic prevention and control for logistics and manufacture. The company also established a daily meeting system to implement various initiatives against the pandemic. The company has clarified and improved the emergency process of pandemic prevention and control, assigned responsible personnel, and established a sound emergency handling process for source control and active prevention.

Employee Care

During the worst time of the COVID-19 outbreak in China, provinces and cities adopted various policies related to city lockdowns, isolation and quarantine policies for inter-provincial and inter-city activities. The company, looking after the needs of its employees, especially non-locals, implemented the DL&IDL Spring Festival Retention Plan to help them, while considering pandemic-related difficulties such as returning home to isolate. To implement the government's requirements for prevention and control of the virus, the company issued advice to employees on fighting the pandemic. To effectively collect and analyze employees' COVID-19-related information we quickly developed an online reporting and tracking system to ensure real-time reporting of the pandemic, daily tracking of employees' health status, real-time reporting of data analysis, and real-time queries on the pandemic.

· Daily pandemic prevention and control information sharing and workshop on-site guidance of prevention and control work

In order to make stakeholders fully understand the corporate social responsibility of Trina Solar, our corporate social responsibility report in 2019 and 2020 refers to GRI standards 2018 issued by global sustainable development standards committee (GSSB), and discloses relevant information around the comprehensive option.

Index	Standard requirements	Status	Section	Remark
101	Foundation: Reporting principles; Using GRI standards for sustainability reporting; Claims the report has been prepared in accordance with GRI standards	●	Report Notes	
General disclosure: Organizational profile				
102-1 – 102-4	Organization name; Activities, brands, products and services; Location of headquarters and operations	●	About Trina Solar	
102-5	Ownership and legal form	●	Company Profile; About Trina Sola	
102-6	Markets served	●	About Trina Solar	
102-7	Scale of organization	●	About Trina Solar	
102 -8	About employees and other workers	●	About Trina Solar; Sustainable Development of Talent	
102-9 –102-10	Supply chains: Significant changes to organization and its supply chain	●	Sustainable Purchasing	
102-11	Precautionary principle or approach	●	Standardized Governance; Risk Management and Internal Audit; Legal Compliance Control and Ethics Construction	
102-12	External initiatives	●	About Trina Solar; Supporting United UN SDGs	
102-13	Membership of associations	●	Communication with Stakeholders	
General disclosure: strategy				
102-14	Statement by senior decision-maker	●	Message from Leadership	
102-15	Key impacts, risks and opportunities	●	Standardized Governance; Challenges and Opportunities; Risk Management and Internal Audit	
General disclosure: ethics and integrity				
102-16 – 102-17	Values, principles, standards and norms of behavior; Mechanisms for advice and concerns about ethics	●	Corporate Culture; Standardized Governance: Risk Management and Internal Audit; Legal Compliance Control and Ethics Construction	
General disclosure: governance				
102-18	Governance structure	●	Organizational Structure	
102-19	Delegating authority	●	Organizational Structure	
102-20	Executive-level responsibility for economic, environmental and social topics	●	Risk Management and Internal Audit	
102-21	Consulting stakeholders on economic, environmental and social topics	●	Communication with Stakeholders; Customer Service; Shareholder Communications; Sustainable Development of Supply Chain	
102-22 – 102-24	Composition of the highest governance body and its committees; Chair of the highest governance body; Nominating and selecting the highest governance body	●	Organizational Structure; Company Profile	
102-25	Conflicts of interest	●	Organizational Structure ; Risk Management and Internal Audit	
102-26 – 102-28	Role of highest governance body in setting purpose, values and strategy; Collective knowledge of highest governance body; Evaluating the highest governance body's performance	●	Standardized Governance; Risk Management and Internal Audit	
102-29 – 102-31	Identify and manage economic, environmental and social impacts; Effectiveness of risk management process; Review of economic, environmental and social topics	●	Materiality Analysis; Challenges and Opportunities	
102-32	Highest governance body's role in sustainability reporting	●	Company Profile; Message from Leadership	
102-33 – 102-34	Communicating critical concerns; Nature and total number of critical concerns	●	Communication with Stakeholders; Challenges and Opportunities	

102-35 – 102-39	Remuneration policies; Process for determining remuneration; Stakeholder' involvement in remuneration; Annual total compensation ratio; Percentage increase in annual total compensation ratio	◒	Communication with Stakeholders; Employees' Rights	
General disclosure: stakeholder engagement				
102-40 – 102-44	Stakeholder groups; Collective bargaining agreements; Identify and select stakeholders; Approach to stakeholder engagement; Key concerns raised	●	Communication with Stakeholders;	
General disclosure: reporting practice				
102-45	Entities included in the consolidated financial statement	●	About Trina Solar	
102-46	Defining report content and topic boundaries	●	Report Notes	
102-47	List of material topics	●	Materiality Analysis	
102-48	Restatement of information	●	Report Notes	
102-49 – 102-56	Changes in reporting; Reporting period; Reporting period; date of most recent report; Report cycle; contact point for questions regarding the report; Claims of reporting in accordance with GRI standards; GRI index	●	Report Notes	
Economic topics				
Management approach				
103-1	Explanation of the material topic and its limits	●	Materiality Analysis	
103-2	The management approach and its components	●	Standardized Governance; Organizational Structure	
103-3	Evaluation of the management approach	●	Report Notes; Risk Management and Internal Audit	
GRI 201: Economic performance				
201-1	Direct economic value generated and distributed	●	Financial Performance; Shareholder Communications	
201-2	Financial implications and other risks and opportunities due to climate change	●	Challenges and Opportunities; Tackling Climate Change	
201-3	Defined benefit plan obligations and other retirement plans	○		None
201-4	Financial assistance received from government	○		None
Market presence				
202-1	Ratios of standard entry level wage by gender compared with local minimum wage	◒	Employees' Rights	
202-2	Proportion of senior management hired from the local community	●	Sustainable Development of Talent	
Indirect economic impacts				
203-1	Infrastructure investments and services supported	●	Photovoltaic Poverty Alleviation	
203-2	Significant indirect economic impacts	●	Message from Leadership; Challenges and Opportunities	
Environmental topics				
Management approach				
103-1	Explanation of the material topic and its limits	●	Materiality Analysis	
103-2	The management approach and its components	●	Green Sustainable Development	
103-3	Evaluation of the management approach	●	Report Notes; Green Sustainable Development	
Materials				
301-1	Materials used by weight or volume	●	Sustainable Purchasing	
301-2	Recycled input materials used	●	Recycling and Disposing of Scrapped PV Modules	
301-3	Reclaimed products and their packaging materials	●	Recycling and Disposing of Scrapped PV Modules	
Energy				
302-1	Energy consumption within the organization	●	Tackling Climate Change	
302-2	Energy consumption outside the organization	●	Sustainable Development of Supply Chain	
302-3	Energy intensity	●	Tackling Climate Change	
302-4	Reduction of energy consumption	●	Tackling Climate Change	
302-5	Reductions in energy requirements of products and services	●	Sustainable Development of Supply Chain	

GRI 201: Economic performance				
303-1	Interactions with water as a shared resource	●	Sustainable Use of Water	
303-2	Management of water discharge-related impacts	●	Sustainable Use of Water Wastewater Discharge	
303-3	Water withdrawal	●	Sustainable Use of Water	
303-4	Water discharge	●	Sustainable Use of Water Wastewater Discharge	
303-5	Water consumption	●	Sustainable Use of Water Wastewater Discharge	
Biodiversity				
304-1	Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	○	/	None
304-2	Significant impacts of activities, products, and services on biodiversity	●	Biodiversity Management	
304-3	Habitats protected or restored	○	/	None
Emissions				
305-1 – 305-2	Direct (Scope 1) GHG emissions; Energy indirect (Scope 2) GHG emissions	●	Reduction of GHG Emission	
305-3	Other indirect (Scope 3) GHG emissions	○		
305-4	GHG emissions intensity	●	Reduction of GHG Emission	
305-5	Reduction of GHG emissions	●	Reduction of GHG Emission	
305-6	Emissions of ozone-depleting substances	●	Tackling Climate Change	
305-7	Nitrogen oxides (NOX), sulfur oxides (SOX), and other significant air emissions	●	Reduction of Exhaust Gas Emission	
Effluents and waste				
306-1	Water discharge by quality and destination	●	Sustainable Use of Water	
306-2	Waste by type and disposal method	●	Solid Waste Management	
306-3	Significant spills	●	Environment-friendly Operation	No severe leakage
306-4	Transport of hazardous waste	●	Solid Waste Management	
306-5	Water bodies affected by water discharges and/or runoff	●	Wastewater Discharge	Compliance emission of waste water
Environmental compliance				
307-1	Non-compliance with environmental laws and regulations	●	Environment-friendly Operation	No violation of environmental laws and regulations
Supplier environmental assessment				
308-1	New suppliers screened using environmental criteria	●	Sustainable Purchasing	
308-2	Negative environmental impacts in the supply chain and actions taken	●	Sustainable Purchasing	
Social topics				
Management approach				
103-1	Explanation of the material topic and its limits	●	Materiality Analysis	
103-2	Management approach and its components	●	Message from Leadership Green Sustainable Developmen	
103-3	Evaluation of management approach	●	Risk Management and Internal Audit; Legal Compliance Control and Ethics Construction	
Employment				
401-1	New employee hires and employee turnover	●	Sustainable Development of Talent	
401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	●	Employees' Rights	
401-3	Parental leave	●	Employees' Rights	
Labor/management relations				
402-1	Minimum notice periods regarding operational changes	●	Employees' Rights	

Occupational health and safety				
403-1	Occupational health and safety management system	●	Occupational Health and Safety	
403-2	Hazard identification, risk assessment and incident investigation	●	Occupational Health and Safety	
403-3	Occupational health services	●	Occupational Health and Safety; Employees' Health	
403-4	Worker participation, consultation and communication on occupational health and safety	●	Occupational Health and Safety; Listening to Employees' Views	
403-5	Worker training on occupational health and safety	●	Occupational Health and Safety	
403-6	Promotion of worker health	●	Employees' Health	
403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	●	Occupational Health and Safety	
403-8	Workers covered by an occupational health and safety management system	●	Occupational Health and Safety	
403-9	Work-related injuries	●	Occupational Health and Safety	
403-10	Work-related ill health	●	Occupational Health and Safety	
Training and education				
404-1	Average hours of training per year per employee	●	Occupational Health and Safety	
404-2	Programs for upgrading employee skills and transition assistance programs	●	Sustainable Development of Talent	
404-3	Percentage of employees receiving regular performance and career development reviews	●	Sustainable Development of Talent	
Diversity and equal opportunity				
405-1	Diversity of governance bodies and employees	●	Sustainable Development of Talent	
Non-discrimination				
406-1	Incidents of discrimination and corrective actions taken	●	Employees' Rights	No discrimination
Freedom of association and collective bargaining				
407-1	Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	●	Employees' Rights	

Child labor				
408-1	Operations and suppliers at significant risk for incidents of child labor	●	Employees' Rights	No child labor
Forced or coercive labor				
409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	●	Sustainable Development of Supply Chain	No forced labor issues at operational spots and with supplier
Security practices				
410-1	Security personnel trained in human rights policies or procedures	●	Sustainable Development of Talent	Human rights training includes security
Rights of indigenous peoples				
411-1	Incidents of violations involving rights of indigenous peoples	○	/	None
Human rights assessment				
412-1	Operations that have been subject to human rights reviews or impact assessments	◒	Employees' Rights	
412-2	Employee training on human rights policies or procedures	●	Employees' Rights; Occupational Health and Safety	
412-3	Significant investment agreements and contracts that include human rights clauses or that underwent human rights screening	◒	Sustainable Development of Supply Chain	
Local communities				
413-1	Operations with local community engagement, impact assessments and development programs	●	Contributing to Society	
413-2	Operations with significant actual and potential negative impacts on local communities	○	/	None
Supplier social assessment				
414-1	New suppliers screened using social criteria	●	Sustainable Purchasing	
414-2	Negative social impacts in the supply chain and actions taken	●	Sustainable Purchasing	
Public policy				
415-1	Political contributions	○	/	None

Customer health and safety				
416-1	Assessment of health and safety impacts of product and service categories	●	Innovation & Sustainable Development	
416-2	Incidents of non-compliance concerning health and safety impacts of products and services	○	/	None
Marketing and labeling				
417-1	Requirements for product and service information and labeling	●	Innovation & Sustainable Development	
417-2 – 417-3	Incidents of non-compliance concerning product and service information and labeling; Incidents of non-compliance concerning marketing communications	○	/	None
Customer privacy				
418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	○	/	None
Socioeconomic compliance				
419-1	Non-compliance with laws and regulations in the social and economic area	○	/	None

Power Beyond Solar

www.trinasolar.com

TRINA SOLAR'S COMMITMENT TO **SUSTAINABLE AND RESPONSIBLE PURCHASING**

In our efforts to build a sustainable future, Trina Solar remains more committed than ever to using responsible purchasing initiatives. Trina procures more than 80 items, including raw materials, auxiliary materials, infrastructure, equipment, office supplies, certification services and more, in order to manufacture high-quality PV modules and deliver smart solar value and services.

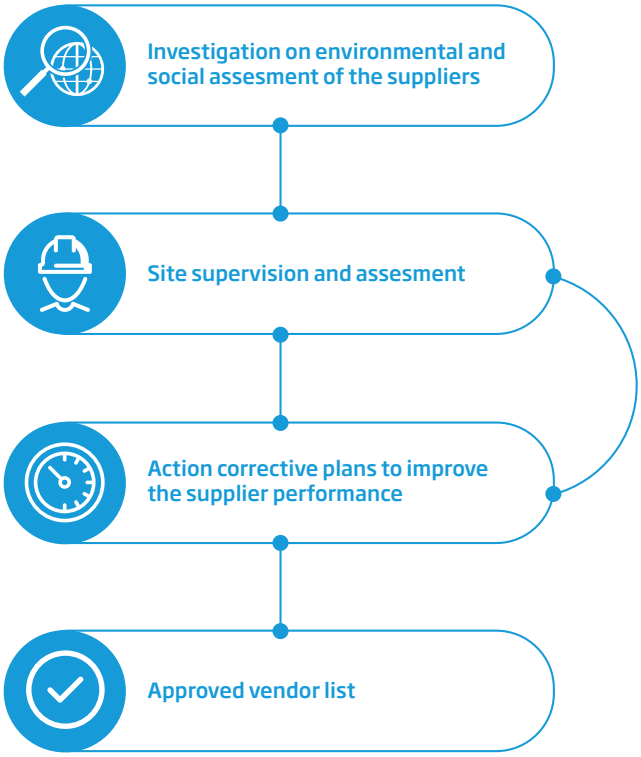
To ensure sustainable and responsible purchasing in this supply chain, Trina Solar has implemented:

- robust Environment, Health and Safety (EHS) management procedures;
- strict supplier-selection processes;
- stringent environmental and social assessment principles; and
- frequent internal and third-party audits.

Supplier Development

In addition to its own green development, Trina Solar conducts environmental and social assessments with potential suppliers before approving them for our vendor list.

Supplier Selection Process



To ensure sustainable and responsible purchasing in this supply chain, Trina Solar has implemented:

- **Business ethics:** Ensuring the suppliers follow ethical standards of fairness and honesty.
- **Health and safety:** Ensuring suppliers have valid health and safety licenses, they provide employees with a healthy and safe workplace, and they reduce accidents, injuries and occupational health hazards.
- **Environmental protections:** Ensuring suppliers have valid environmental protection licenses, comply with all relevant environmental protection requirements, and adopt environmentally responsible manufacturing processes.
- **No discrimination:** Ensuring suppliers maintain a workplace without discrimination and physical or verbal harassment.
- **Strict prohibition of child labor, forced labor and labor abuse:** Ensuring suppliers prohibit corporal punishment and forced labor, including use of prisoner labor, indentured labor, bonded labor, military labor or slave labor.
- **Free association and collective negotiation:** Ensuring suppliers respect their employees' rights to join, organize or not join labor unions.

Conflict-Free Minerals

Conflict minerals refer to certain metals mined and sold in areas that may result in serious human rights abuses and environmental issues. To avoid the use of conflict minerals in our operations and to ensure they do not enter our supply chain, Trina Solar has taken active measures that include:

- Adopting a formal conflict mineral management policy and system for addressing this risk;
- Establishing and conducting conflict mineral survey for our supply chain;
- Organizing conflict mineral training for key suppliers; and
- Requiring all suppliers to sign formal agreements confirming they do not use conflict minerals in their products.

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Download Trina Solar's 2019-2020 Corporate Social Responsibility Report to learn more about our responsible purchasing processes.

Get in touch with the solar pros at Trina Solar for additional questions.