Eradicating Forced Labor from Solar Supply Chains: Eventide’s Approach

Forced labor contaminates solar supply chains. This report examines the scale of the crisis and describes Eventide’s proposed solution.
How Does Forced Labor Affect the Solar Supply Chain?

INTRODUCTION

At Eventide Asset Management, one of our core investment ideals is respecting the value and freedom of all people. For this reason, we take a strong stance against the use of forced labor at any stage in a company’s supply chain. For example, when we discover that one of our portfolio companies sources from a factory with labor issues, we engage the company to work with their suppliers to address this issue. If their supplier is unwilling or unable to do so and the company is unwilling to cut ties with the supplier, we would divest the company in question. But what if an entire supply chain is riddled with forced labor issues? What if an entire industry has become entangled in a state-sanctioned, ethnically motivated system of oppression? \(^1,2\) This is the question facing the solar industry, and investors, today.

The link between forced labor and solar begins in the Xinjiang region of China, home to 12 million Uyghurs. Disguised with terms such as “surplus labor”, “labor transfer”, and “poverty alleviation”, Chinese government documents and news reports reveal an industrial-sized forced labor program.\(^3\) Under current conditions, the Uyghur people and other minority groups are denied the right to free choice of employment as stated in Article 23 of the U.N. Declaration of Human Rights.\(^4\)

Forced Labor is part of a larger network of oppression against ethnic and religious minorities in Xinjiang (see page 4). Atrocities are directed by the Chinese Communist Party and through the Xinjiang Production and Construction Corps (XPCC), a paramilitary organization that dominates the region.\(^5\)


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“Labour transfers are deployed within an environment of unprecedented coercion, undergirded by the constant threat of re-education and internment.”\(^6\)
MANUFACTURING A SOLAR PANEL

Since forced labor enters the supply chain early on, up to 97% of all polysilicon-based solar panels are contaminated by forced labor.

1 Raw Materials

2 Polysilicon

3 Ingots

4 Wafers

5 Cells

6 Modules

67% of raw materials come from China (2020)²

Forced labor enters the solar supply chain in the first step: mining quartz and making metallurgical silicon. Xinjiang accounts for about 33.4% of the world’s metallurgical silicon production. Of the ten major metallurgical silicon producers in the region, seven directly use forced labor. The three remaining producers are suspected of employing forced labor and are direct beneficiaries of the XPCC.⁹

82% of polysilicon comes from China (2021)¹⁰

Three of the primary polysilicon makers in Xinjiang directly use forced labor and have forced labor in their supply chains. A fourth has forced labor in its supply chain and directly benefits from the XPCC.¹¹ Collectively, they were responsible for about 48% of the world’s polysilicon production in 2021.¹²

97% of wafers come from China (2020)¹⁴

Since these four companies supply polysilicon to up to 97% of the ingot, wafer, cell, and module manufacturers, those manufacturers also have forced labor in their supply chains. To make matters worse, in the ingot making process, manufacturers likely mix polysilicon from a variety of sources, tainting every panel downstream.¹³

Polysilicon is melted and shaped into ingots, which are in turn sliced into wafers and then used to construct photovoltaic cells.¹⁵

While most module makers do not directly use forced labor, at least one factory has been found to be co-located with a high security internment camp.¹⁶

Several countries and organizations have called the atrocities in Xinjiang a genocide.\textsuperscript{17,18,19} What started with incarceration of Uyghurs suspected of ties to terrorism has grown into mass imprisonment of at least one million Uyghurs detained for reasons as simple as praying.\textsuperscript{20} Survivors of these camps report torture, rape, and forced sterilization, among other atrocities.\textsuperscript{21}

“It’s not immediate, shocking, mass-killing on the spot type of genocide, but it’s slow, painful, creeping genocide.” —Joanne S. Finley, PhD, Newcastle University, UK\textsuperscript{24}

Outside the camps, Xinjiang has become an open-air prison. Surveillance cameras use artificial intelligence to send real-time alerts when a Uyghur person leaves their neighborhood.\textsuperscript{26} Uyghur families are assigned Han Chinese “relatives,” who live in their houses to monitor them for suspicious behavior like praying or abstaining from alcohol.\textsuperscript{27} Ancient cemeteries, mosques, and shrines have been demolished.\textsuperscript{28} Children are taken from their parents and sent to massive state-run orphanages.\textsuperscript{29} The UN is also investigating allegations of organ harvesting.\textsuperscript{30}
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FORCED LABOR

Forced labor in Xinjiang is directly connected to the above-mentioned atrocities. The government transfers Uyghurs en masse from internment camps to factories across China. Many factories are intentionally built next to detention camps, as seen in the map to the right. Furthermore, after release, some former detainees are given labor assignments and told if they don’t sign the contract, “[they will] be sent back to the camp.”

The government pays companies to receive these workers and offers various incentives, such as free electricity and tax benefits. Chinese authorities conceal these programs using terms like “poverty alleviation,” “surplus labor,” or “vocational training.” But, in reality, on the work site, workers face constant surveillance, long hours, mandatory indoctrination, and the threat of further detention.

OPPRESSION OF WOMEN

Some of the worst atrocities in Xinjiang have been committed against women. “Uyghurs and Kazakhs were brought in hooded and shackled. The women spoke of beatings, inedible food, beds stained with urine ... and blood. Sabit met two women who had bruises on their wrists and ankles — marks, they told her, from shackles that were never removed.”

“Women were removed from the cells ‘every night’ and raped by one or more masked Chinese men. She said she was tortured and later gang-raped on three occasions, each time by two or three men.”

Chinese Han men have been sent to stay with Uyghur women and sleep in their beds while their husbands are in the camps.
We are directly engaging companies in the solar supply chain who have the **power to change sourcing** and asset managers who have the **power to move capital**.

We propose a phased approach that focuses first on the worst offenders — companies directly employing forced labor. We recommend three phases, each occurring over a six-month period to allow time for supply chains to respond and increase capacity.
The Problem of Bifurcation

At Eventide, we support the implementation of traceability as a first step. However, traceability may create a problematic bifurcated supply chain that falls well short of an ethical solar supply chain with fair labor practices and justice for the Uyghur people.

In a bifurcation scenario, one company can support two separate supply chains, one with forced labor to serve markets less concerned by these practices and another without forced labor to serve the U.S. and E.U. markets. Implementing traceability alone allows the company to continue to benefit from and rely on exploitation through forced labor without losing important business due to unethical practices. Suppliers could expand their use of forced labor in Xinjiang or in other parts of China, while passing through product in a separate supply chain that meets the traceability protocol.

Sourcing from companies that do not use forced labor — directly or in their supply chains — for any of their products is the long-term solution.

Sourcing from companies that do not use forced labor — directly or in their supply chains — for any of their products is the long-term solution. Otherwise, companies are participating in the cumulative destruction of the Uyghur people through the insidious nets of forced labor, family separation, and forced sterilization, among other atrocities.

↓ The issue: In a bifurcation scenario, even with traceability, one company can support two separate supply chains, using forced labor to serve markets less concerned by these practices and avoiding forced labor to serve the U.S. and E.U. markets.
At Eventide, we are pushing for a comprehensively forced-labor-free solar supply chain.

The future of renewable energy depends on it.
ERADICATING FORCED LABOR FROM SOLAR SUPPLY CHAINS: EVENTIDE'S APPROACH
A Phased Approach to Eradicating Forced Labor

**PHASE ONE**

**OVERVIEW**
Solar developers stop sourcing from module makers that directly employ forced labor.

To get off the banned list, implicated solar panel manufacturers would need to prove they are no longer employing forced labor. During this phase, module makers can begin to procure polysilicon from companies that do not directly use forced labor or do not have forced labor in their supply chains. These suppliers could be temporary sources until they either take remedial actions or are ultimately phased out in Phase Three. However, some of these companies may still be sourcing raw materials from Hoshine and therefore may still be subject to the U.S.’s WRO.

**ENGAGE OR BAN**: Module makers directly employing forced labor

**PHASE TWO**

**OVERVIEW**
Solar developers stop sourcing from module makers that source from polysilicon providers that directly employ forced labor.

Any module maker that procures polysilicon from a company that directly employs forced labor is banned at the end of this phase. If a module maker does not shift their polysilicon supply, then solar development companies can continue to source modules from Phase Three module makers (see below), allowing their business operations to continue.

**ENGAGE OR BAN**: Polysilicon providers directly employing forced labor; module makers sourcing from those polysilicon providers.

*To engage means to discuss taking remedial actions. To ban means to stop purchasing product from a company.*
PHASE THREE

OVERVIEW
Solar developers stop sourcing from either module makers or polysilicon companies that have exposure to raw material providers who directly use forced labor or are implicated in such practices.

Module makers that only have forced labor in their raw material supply chains are banned at the end of this phase. Raw material providers often work with the XPCC, which executes much of the human rights abuses against people in Xinjiang. Solar raw material suppliers are heavily exposed to the XPCC; many are in XPCC-controlled industrial parks, obtain services from the XPCC, or are directly subsidized by the XPCC.

In this step, raw material procurement must be completely removed from companies that operate in the region unless the raw material supply from Xinjiang itself becomes free of forced labor. Companies in this step will have had ample time to act.

ENGAGE OR BAN:
Raw material suppliers who use forced labor or are implicated in such practices. Companies with exposure to forced labor through raw materials providers.

- RAW MATERIALS
  Eleven companies implicated

- POLYSILICON
  Six companies implicated

- MODULE MAKER
  Five companies implicated
Acknowledgment

We would like to give special thanks to Laura T. Murphy and Nyrola Elimä, whose “In Broad Daylight” report produced through the Helena Kennedy Centre for International Justice at Sheffield Hallam University has shed tremendous light on this difficult situation. Their work made this report possible.

At Eventide

Eventide is not invested in the companies listed in this report that directly use forced labor or are implicated in such practices. Eventide believes that companies can successfully take remedial actions on this issue. We believe that a supply chain with labor integrity is a driver of long-term business success. We are interested in being a part of the solution in the solar supply chain. We want to invest in solar supply chain companies that are making solar panels with no forced labor from start to finish. We also want to invest in solar power developers who are only doing business with companies free of forced labor.

Disclosures

The information contained in this report is obtained from third-party sources and is believed to be accurate and complete as of January 2022. This situation is rapidly evolving and circumstances may materially change in the future from what has been presented. Eventide is not legally liable for any inaccuracies, misrepresentations, or misstatements in the report as of its publishing date or in the future.

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Bibliography


8. Ibid.

9. Ibid.


11. Ibid.


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16. Ibid.


22. Murphy and Elimä. “In Broad Daylight.”


49. Murphy and Elimä. “In Broad Daylight.”
We believe high-quality companies that excel at creating value for others and trade at a discount to intrinsic value offer superior long-term risk-adjusted returns.

**OUR INVESTMENT PHILOSOPHY**

We believe high-quality companies that excel at creating value for others and trade at a discount to intrinsic value offer superior long-term risk-adjusted returns.

**OUR PURPOSE**

Eventide strives to honor God and serve its clients by investing in companies that create compelling value for the global common good.

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