



Forced Labor and the Clean Energy Transition: Finding A Responsible Way Forward

Forced labor in supply chains is a pervasive and pernicious element of the global marketplace, affecting individuals, businesses, and governments across a variety of industries and regions of the world. Although progress toward supply chains free of forced labor has been generally slow moving in most industries, the increasing demand for clean energy technologies to address the climate crisis presents an opportunity to emphasize the importance of establishing new clean energy supply chains that uphold human rights, enable countries to meet global climate targets, and generate economic growth. The accelerating growth of renewable electricity worldwide has led to the emergence of a new global energy economy, increased demand for key mineral inputs, and expanded mining and extraction activities. Coupling respect for human rights as resources with mobilization towards accelerating the clean energy transition will reduce the number of individuals vulnerable to labor abuses, including forced labor, as well as the risk of climate disasters.

Silicon metal for solar photovoltaic (PV) modules and cobalt for electric vehicle (EV) batteries are examples of inputs needed for important clean energy technologies that are often sourced from areas with long and complicated histories of human rights abuses, including forced labor and forced child labor. Credible evidence indicates that manufacturers of silicon metal—used by the solar supply chain and other sectors—in the Xinjiang Uyghur Autonomous Region (Xinjiang) of the Peoples Republic of China (PRC)—directly engage in state-sponsored forced labor programs targeting predominantly Muslim Uyghurs and members of other ethnic and religious minority groups, amid the ongoing genocide and other crimes against humanity. Direct use of forced labor in the solar industry appears concentrated in the raw material mining and silicon metal production processes, increasing the risk that downstream component producers (e.g., solar cells and solar modules) are using tainted supplies. In the Democratic Republic of the Congo (DRC), artisanal and small-scale mining of cobalt has been associated with forced child labor and other abuses. These examples highlight the urgent need for adherence to environmental, social, and governance (ESG) standards in extractive sector supply chains to avoid labor and human rights abuses and ensure a just energy transition.

Silica in the PRC

In the drive to decarbonize the global economy, one of the most important options for renewable power is PVs, used to convert sunlight into electricity. The PRC dominates global solar supply chains, including the supply and processing of silicon metal, solar-grade polysilicon, and the ingots, wafers, and cells that ultimately form a finished solar panel. The PRC accounts for 77 percent of global polysilicon production, 45 percent of which originates in Xinjiang, where the PRC government is carrying out a mass detention and political indoctrination campaign that subjects predominantly Muslim Uyghurs and members of other ethnic and religious minority groups to forced labor under the guise of “vocational training.” The world’s largest supplier of silicon metal, Hoshine Silicon Industry, has operations in Xinjiang and has been found to be directly involved in state-sponsored forced labor programs in the region.

Evidence indicates that solar products and input at nearly every step of the production process in the PRC, from raw silicon material mining to final solar module assembly, are linked to known or probable forced labor programs. Some of the world’s largest suppliers of solar panel materials and components reportedly have ties to the Xinjiang Production and Construction Corp, a state-owned economic and paramilitary organization that has been sanctioned by the U.S. government for serious human rights abuses. Because nearly half of global polysilicon production occurs in Xinjiang, much of the global solar energy supply chain currently includes components likely made with forced labor from that region.



Cobalt in the DRC

As part of the clean-energy transition, increasing demand for EVs is driving exponential increases in demand for cobalt, a key component in most rechargeable lithium-ion batteries used in EVs. Because the DRC has large cobalt reserves, the country plays an important role in EV battery supply chains. Today, about 70 percent of global cobalt is mined in the DRC, with approximately 10 to 30 percent produced by artisanal miners operating in dangerous conditions. Despite nascent efforts to formalize and regulate the artisanal mining sector, poverty-driven child labor remains prevalent. Since 2015, the TIP Report narratives on the DRC have highlighted forced labor of children in artisanal cobalt mines. Integrating artisanal and small-scale mining into mainstream economies and ensuring local communities benefit from extractive activities are central to creating sustainable supply chains. In 2020, the DRC joined the Global Battery Alliance's Cobalt Action Partnership, which is a means of fostering transparent, verifiable, and responsible artisanal and small-scale mining in cobalt supply chains.

The Way Forward

The urgent need to tackle the climate crisis presents governments and the private sector with both a challenge and an opportunity to build new critical supply chains that incorporate human rights, transparency, and sustainability standards by design and prevent human trafficking. With the right array of coordinated and focused policies and efforts, governments, industry leaders, and civil society stakeholders can accelerate current efforts to make all supply chains more responsible, transparent, and traceable. These efforts are not only critical to support the clean energy transition, but also are vital to eliminating labor and human rights abuses and increasing the resilience and responsibility of global manufacturing chains.

Improving sector governance, including protections for labor rights, through adherence to the highest ESG standards, can help ensure stable supply chains that support the clean energy transition. Regarding the sustainable production of critical energy minerals, several public and private sector initiatives have examined mineral supply chains and can inform policy decisions regarding minerals sourcing and positive sectoral governance.

- ▶ The Organization for Economic Co-operation and Development's Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas promotes accountability and transparency in supply chains coming from conflict zones.
- ▶ The Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development's Guidance for Governments: Managing artisanal and small-scale mining provides guidance on sectoral management as well as supporting local communities by bringing informal mining sectors into the formal economy.
- ▶ The Initiative for Responsible Mining Assurance's Standard for Responsible Mining defines good practices for what responsible mining should look like at the industrial scale including environmental and social aspects.
- ▶ The Initiative for Responsible Mining Assurance's Standard for Responsible Mineral Processing defines best practices at operations beyond the mine gate and focuses on development and production of minerals.
- ▶ Government to government initiatives, such as the Department of State's Energy Resource Governance Initiative, also serve to build governance capacity in energy mineral rich developing economies to create more responsible and resilient mining sectors.
- ▶ The Department of Homeland Security's U.S. Customs and Border Protection issued a Withhold Release Order instructing customs officials to detain shipments containing silica-based products made by Hoshine and its subsidiaries.

Science and technology innovations can also support just and equitable supply chains. For example, evolution in battery chemistry toward lower cobalt content and/or advances in recycling provide pathways for reducing raw-material extraction and limiting associated human rights and ESG problems.

A clean energy transition is essential to combating the climate crisis; however, it is equally essential for that transition to respect human rights. Those involved at all stages of the supply chain must be provided safe and fair employment, free of exploitation. Governments and industries can leverage existing frameworks to establish and enforce a new global standard in transparent and safe supply chain operations and, in doing so, may usher in a new future not only for energy but for all stakeholders involved in the energy transition.

