

INTERNATIONAL POWER-TO-X-HUB

Catalysing defossilisation globally

PtX.Green Steel Training

Defossilising the Global Iron and Steel Industry with Renewables and Green Hydrogen

The global iron and steel industry is a major emitter of greenhouse gases, responsible for ca. 10% of global CO₂ emissions. About 2 million tonnes of steel are produced per year globally, with average emissions of 2 tonnes of CO₂ per tonne of steel. Thus, the industry is under increasing pressure to reduce emissions and transition away from fossil fuels and feedstocks.

The PtX.Green Steel Training is a comprehensive training about conventional, new and green technologies of iron- and steelmaking, and their economic and policy aspects.

Duration and Format

- 4 hours, 1 day or 2 days
- On site, hybrid or virtual
- Train-of-Trainers programme available (1 week)

The modular setup of the training allows to easily adapt it to different target audiences, durations and national contexts (e.g. depending on existing industrial structures in a country).

Target Audience

- Decision-makers in e.g. industry, transport, infrastructure, energy, and environment
- Experts from regulatory authorities and other relevant administrations
- Experts in public and private research institutes, energy associations/renewable energy agencies
- Private sector professionals

Training sessions can be tailored to focus on specific interests of the target audience.

Training Contents

1. **Introduction to the global steel industry and demand**
2. **Conventional fossil-based iron and steel production**
 - Blast Oven Furnace route
 - Electric Arc Furnaces
 - Direct Reduction of Iron
3. **Low-carbon iron and steel production**
 - Energy efficiency
 - Biomass
 - Carbon Utilisation and Storage (CCU)
4. **Green iron and steel production with green electricity**
 - Energy infrastructure
 - Net-zero steel production in Electric Arc Furnaces
 - Novel concepts like electrolysis and electrowinning
5. **Green iron and steel production with green hydrogen**
 - Hydrogen supply
 - Infrastructure
 - Hydrogen-based Direct Reduction of Iron
 - Novel concepts like fluidised bed and plasma smelting
6. **Policy and regulatory framework for green iron and steel industry**
 - CO₂ emissions and pricing
7. **Economic aspects of green iron and steel production**
 - Economic viability
 - Global trading
8. **Transfer into a national context**
 - Country analysis tool
9. **Case studies of projects**
 - Research and industry projects

What is Power-to-X?

To reach climate neutrality by 2050, we must transform our economies to operate emission-free fast. While 100 % renewable energy is key for this transformation, some industries and transport sectors cannot yet directly use renewable electricity to become climate neutral. Until they can, Power-to-X (PtX) is the missing link.

PtX enables us to produce anything historically dependent on fossil feedstocks, now using renewable electricity. These sustainable, climate neutral e-fuels and chemicals can defossilise high-emission industries, including the chemical, fertiliser, steel, and cement industry, as well as aviation and maritime transport.

PtX offers a tremendous potential for many countries all over the world. Due to their favorable conditions for renewable energy production, they can leverage new business opportunities with PtX and become frontrunners in emerging global PtX markets.

What does the International Power-to-X Hub offer?



Access to cutting-edge research and insights on PtX



Training on PtX for decision makers



Exchange platforms for PtX experts & enthusiasts



Advisory on regulatory frameworks, partnerships, and financing for PtX projects



Access to 120 GIZ cooperation countries

and enables an international exchange of experts around the globe.

The on-site trainings are organised at the request of GIZ projects and political partner institutions in selected countries. If you are interested in individual training, please check out our e-learning courses.

More PtX Hub Trainings

Add-On Modules

- Sustainability
- Aviation
- Shipping
- Green Steel
- Green Ammonia and E-Fertiliser
- Sustainable Chemistry and Power-to-Chemicals
- Certification of PtX products
- PtX Project Finance
- Carbon Border Adjustment Mechanism (CBAM)
- Safety

Free E-Learnings (self-paced)

- Renewable PtX Basic Training
- PtX.Sustainability & EESG Framework
- Green Hydrogen & PtX Certification



More information on the training offers:

<https://ptx-hub.org/academy/>

Contact

Email: trainings@ptx-hub.org

 [LinkedIn @International Power-to-X Hub](#)

Learn more about the project activities on the website:
www.ptx-hub.org

The PtX.Academy

Since 2019, the International PtX Hub offers trainings and workshops for decision-makers on green hydrogen and PtX. The goal is to train and connect a critical mass of people who are enthusiastic about renewable PtX and can accelerate the uptake of PtX production, usage, and trade in their countries.

To date, the PtX Hub has delivered more than 100 trainings in 27 countries to more than 1,800 learners.

The training offer consists of our standardised **Renewable Power-to-X Basic Training**, add-on modules for several topics, e-learning courses and a Train-of-Trainers programme, which has already certified 150 trainers. The PtX.Community connects the training alumni