



**A centre of expertise
and collaboration**



**Catalysing
defossilisation
globally**



The International Power-to-X Hub is a centre of expertise and collaboration for innovative and sustainable green hydrogen and Power-to-X value chains.

Together with our partners, we identify Power-to-X solutions that are adapted to the specifics of each country and lead to sustainable economic transformation.

The PtX Hub builds and fosters strong networks with industry, academia, administrations, and civil society with hubs in Africa, Asia, Europe, and Latin America.



Visit our website
to get to know more:
ptx-hub.org

Promoting sustainable aviation and shipping

Sustainable aviation

Air traffic is expected to grow by 4% per year over the next 20 years. To reconcile this growth with the sector's net zero goal by 2050, airlines and airports will need to switch to sustainable aviation fuel. Power-to-Liquid fuels are the most promising pathway – but not yet readily available in the market.

We accelerate the increase of availability of sustainable aviation fuels by facilitating

demonstration plants, developing capacities, connecting stakeholders, and advising on policies and instruments such as a global book and claim system.

We contribute to the ACT-SAF programme of the International Civil Aviation Organisation (ICAO) by delivering aviation trainings to decision-makers and developing policy recommendations for countries to become Power-to-Liquid pioneers.



Climate-neutral shipping

Maritime transport is responsible for 3% of global emissions. While demand scenarios expect global freight to double or even triple by 2050, the sector is committed to achieving net zero emissions within the same timeframe. Some technological solutions are already at hand: vessels propelled with PtX fuels such as e-methanol or e-ammonia are already in operation or under construction.

To support the transition to sustainable fuels, we facilitate the exchange of knowledge between policymakers,

technology providers, ship owners, and other stakeholders.

We build capacity on technological options, international regulation, and incentivising instruments such as Green Shipping Corridors, in both the transport and energy sector. We carry out studies assessing market opportunities around green shipping in Morocco and South Africa. In Morocco, we are developing a Power-to-Liquid research plant in a consortium that will demonstrate the production of sustainable shipping and aviation fuels.





“Sound policy and regulatory frameworks create the enabling environment for companies and financial institutions to start building and investing in Power-to-X plants now. At the same time, these frameworks must ensure that the country and its communities benefit fully from the opportunities presented by this emerging market, including workforce development and job creation.”

Frank Mischler, Director of the International PtX Hub



Policy & regulatory advice

As with all rapid technological advances, regulatory frameworks and policies for green hydrogen and PtX are lagging behind the innovations. Yet solid frameworks are needed for sustainable and safe production, trade and use, as well as investment security.

We advise on effective and targeted strategies, policies, and regulatory frameworks to enable the rapid scale-up of green hydrogen and Power-to-X markets. We advocate for innovative

financing mechanisms and a global book and claim system and for defining credible sustainability standards and certification schemes.

For instance, we assist Argentina, Chile, and Kenya in designing and implementing their PtX strategies. We also take part in international initiatives and fora for advancing defossilisation with renewable hydrogen and PtX such as the Breakthrough Agenda, a coalition of initiatives started at COP27 to help keep 1.5°C in reach.

Capacity building

A thorough understanding of the technology and economics of Power-to-X is often still lacking, yet crucial to realising the full potential of PtX. We address this with our trainings for decision-makers.

The Basic Training, the Add-On Modules, and the Train-of-Trainers programmes educate and connect a critical mass of committed experts on renewable PtX and can accelerate the uptake of PtX production, usage, and trade in their countries.

Our alumni community of around 1000 policy makers regularly meets to share and compare latest technology and policy advancements in their regions.

“I highly recommend attending the training on green hydrogen, renewable PtX, and related topics. Professor Samuel John’s in-depth knowledge, engaging delivery, and ability to inspire made one feel informed, motivated, and excited about the transformative potential of clean, sustainable energy technologies.”
John Nowaseb, Swakop Uranium on the Basic Training in Namibia in June 2023 held by Professor Samuel John, who previously participated in the PtX Hub’s Train-of-Trainers programme in Germany



Read more about our training programmes here:
ptx-hub.org/academy



We are active in 13 countries

For example, we are building a first-of-its-kind research and training plant that will demonstrate the production of certified sustainable aviation and maritime fuels in Morocco and are supporting the development and implementation of national hydrogen strategies, e.g. in Argentina, Kenya, and Namibia.



20+
partner
organisations

900+
decision-makers
trained

Our track
record

100+
PtX trainers
certified





Cross-sectoral stakeholder dialogues

In any sector where PtX can reduce emissions, there is much to be gained from sharing and exchanging expertise. Our unique asset is the ability to connect policy makers, project developers, civil society, off-takers, and investors from all regions of the world.

“Thank you for the week, we learned a lot about the opportunities in Germany and what we need between us to capture them. We are in contact to get our projects off the ground.”

Katherine Orozco, Hydrogen Leader of Ecopetrol about a PtX Hub study trip through Germany in September 2023

At the **Berlin Energy Transition Dialogue 2023**, we invited policy makers and project developers from Germany, Namibia, South Africa, Uruguay, and the MENA region to come to a joint understanding of how PtX can deliver both on climate action and economic development. A delegation trip in September 2023 brought experts from seven countries together to participate in the Transport and Climate Change Week in Berlin, followed up with a **study tour to Copenhagen** to connect with companies pushing climate-neutral shipping forwards.

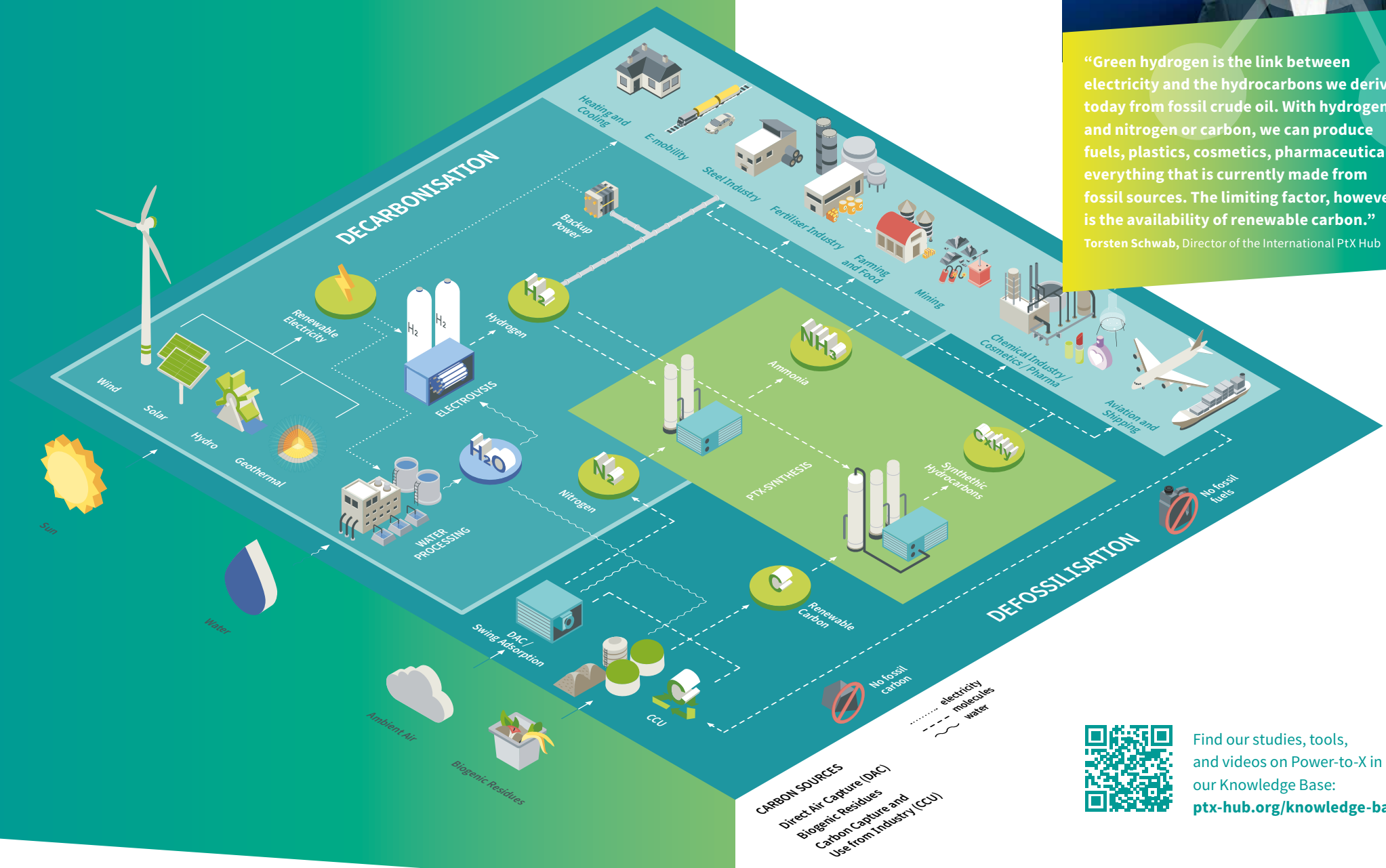
„It is crucial that the Ministry of Energy and Mineral Resources of Jordan has heard about the EU requirements at this early stage to take them into consideration while developing green hydrogen projects.“



Eng. Hasan Al-Heyari

Assistant of the Secretary General of the Ministry of Energy and Mineral Resources (MEMR) for Energy Affairs at the PtX Hub’s workshop on EU requirements and certification for Power-to-X in Jordan in May 2023

Sustainable Power-to-X – How does it work?



Transport and Climate
Change Week

#TransportWeek21
#wechangetransport



“Green hydrogen is the link between electricity and the hydrocarbons we derive today from fossil crude oil. With hydrogen and nitrogen or carbon, we can produce fuels, plastics, cosmetics, pharmaceuticals... everything that is currently made from fossil sources. The limiting factor, however, is the availability of renewable carbon.”

Torsten Schwab, Director of the International PtX Hub



Find our studies, tools,
and videos on Power-to-X in
our Knowledge Base:
ptx-hub.org/knowledge-base

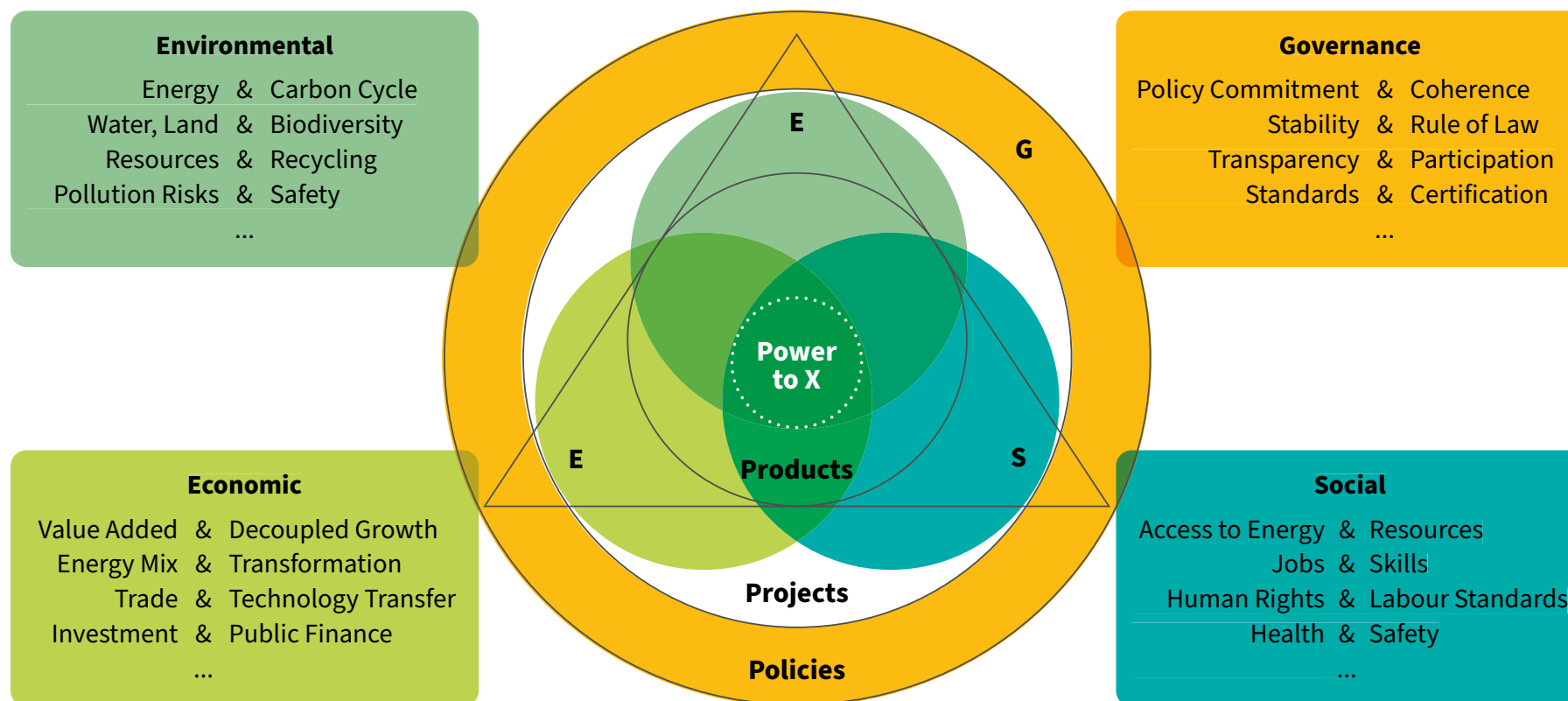
Truly sustainable PtX

For Power-to-X production to be truly climate-neutral as well as socially and environmentally beneficial, ambitious sustainability standards should be met from the start and to the entire value chain.

We distinguish four sustainability dimensions – **E**(nvironmental), **E**(conomic), **S**(ocial), and **G**(overnance) and have identified a wide range of sustainability concerns and opportunities.



Find our Scoping Paper on PtX.Sustainability here:
ptx-hub.org/ptx-sustainability



Our funders

The Power-to-X Hub is implemented by the **Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH** on behalf of the **German Federal Ministry for Economic Affairs and Climate Action**. Financed by the **International Climate Initiative (Internationale Klimaschutzinitiative, IKI)**, the PtX Hub is a contribution to the **German National Hydrogen Strategy of 2020** and represents one of the four pillars of the **BMUV's PtX action programme** initiated in 2019.

Our partners



Contact

info@ptx-hub.org | www.ptx-hub.org | [@International Power-to-X Hub](https://www.linkedin.com/company/international-power-to-x-hub)



Supported by:



on the basis of a decision
by the German Bundestag



Implemented by

