

PowerFuels for Aviation: Truly Sustainable?!

The International PtX Hub Berlin & ProQR in Brazil

giz Deutsche Gesellschaft
für Internationale
Zusammenarbeit (GIZ) GmbH

On behalf of:



Federal Ministry
for the Environment, Nature Conservation
and Nuclear Safety

of the Federal Republic of Germany

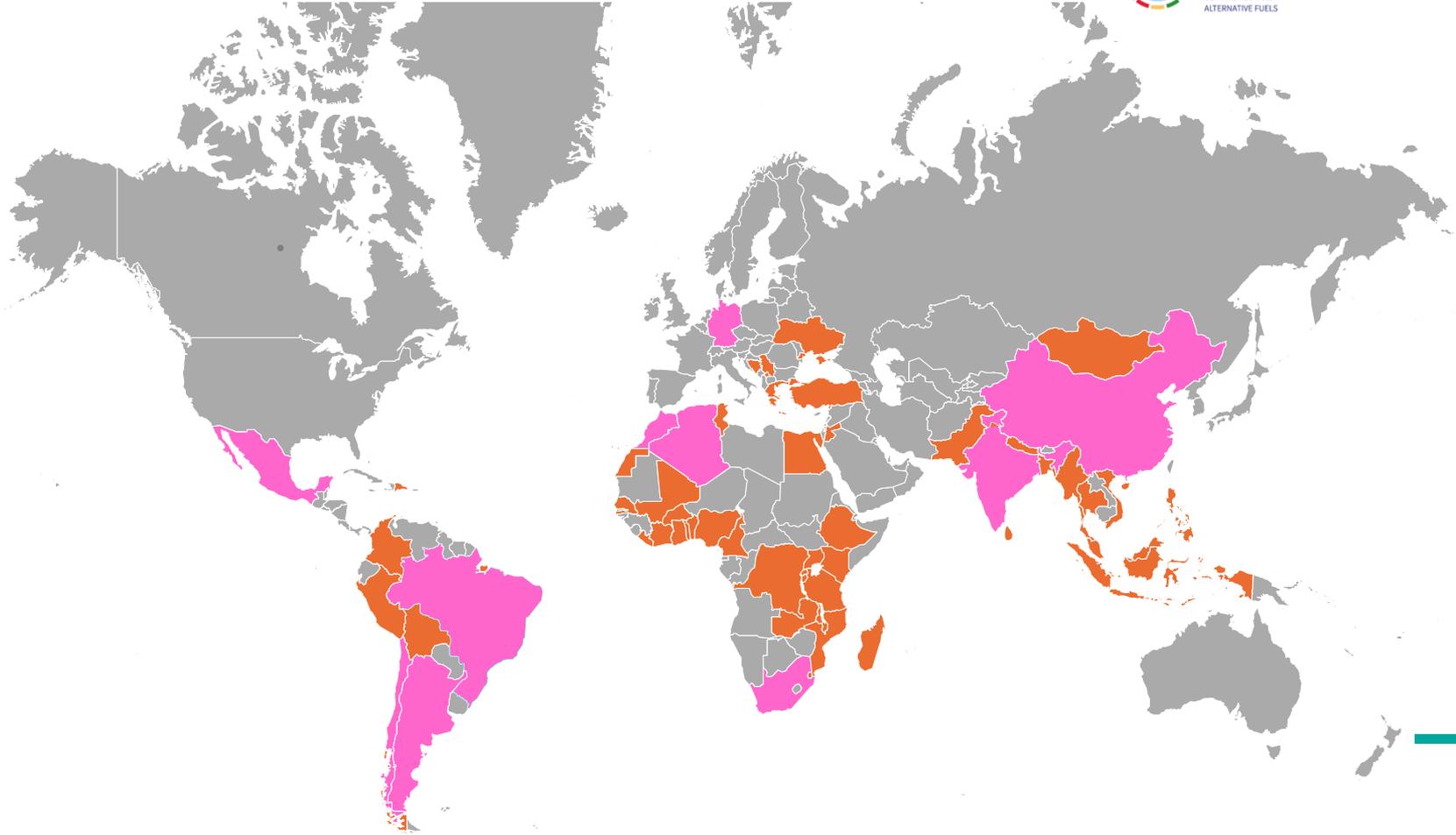


ProQR
CLIMATE NEUTRAL
ALTERNATIVE FUELS

International
PtX Hub
Berlin



GIZ is internationally active on energy and Power to X



PtX and sustainability

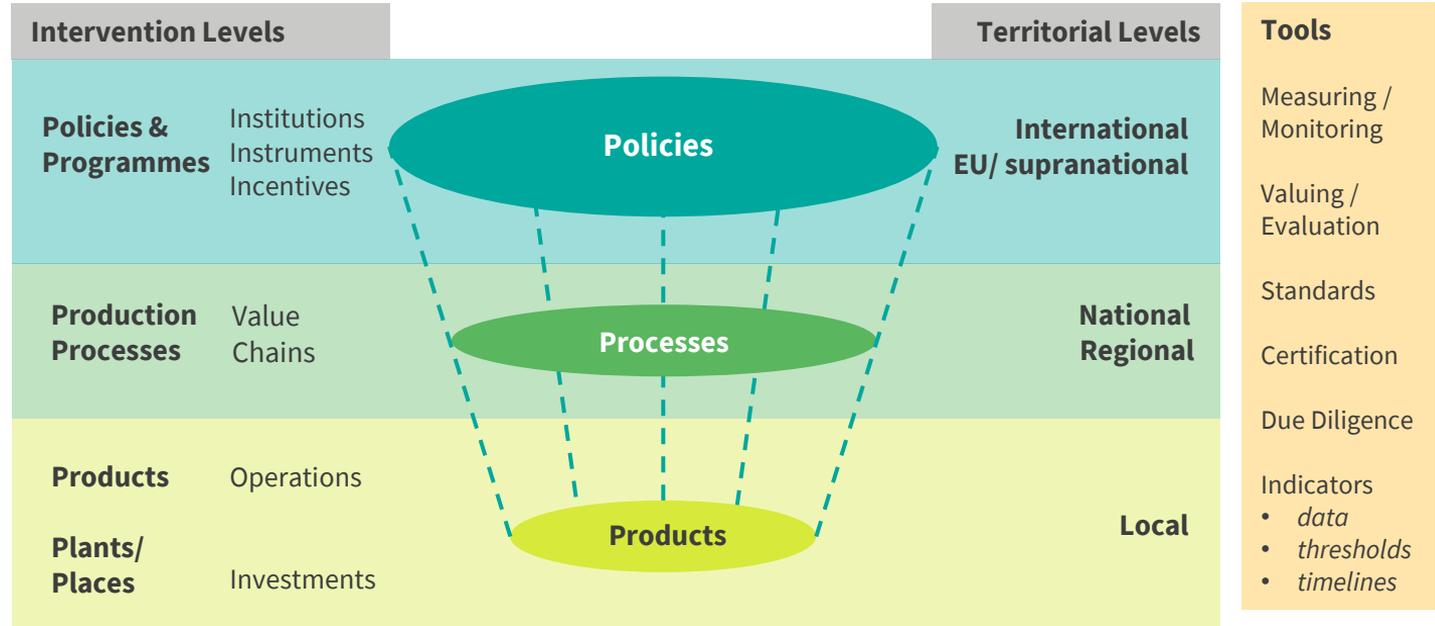
A comprehensive assessment

Sustainability concerns must be considered at different assessment levels

Comprehensive **sustainability standards** must be met, **ensuring:**

- ecosystem integrity
- economic value added
- social inclusion
- decent work and human rights
- transparency
- public acceptance
- financial support

at **different levels**



PtX and sustainability

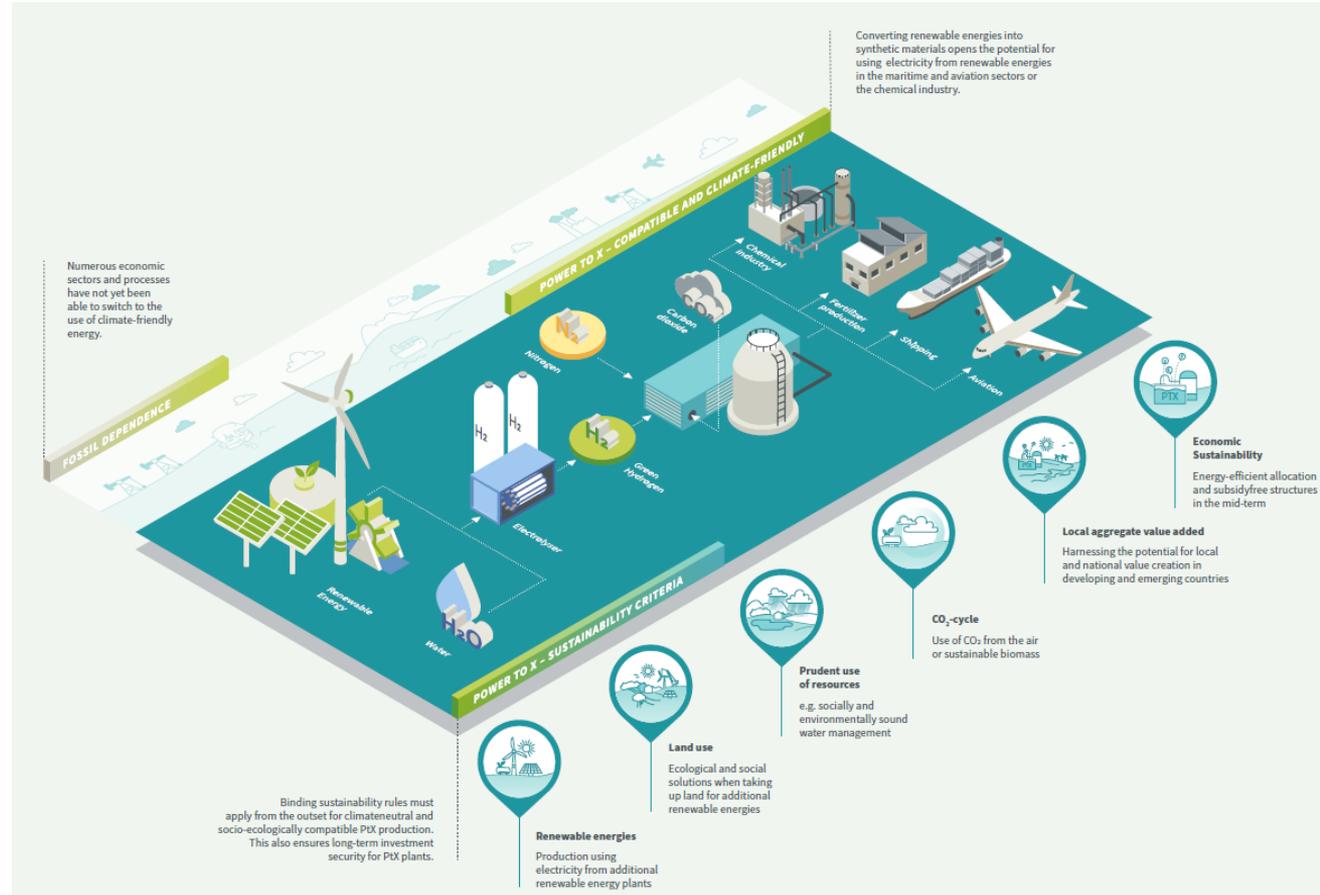
A comprehensive assessment

Comprehensive **sustainability standards** must be met at **every step of the value chain.**

Ensuring:

- ecosystem integrity
- economic value added
- social inclusion
- decent work and human rights
- transparency
- public acceptance
- financial support

at **different levels** and at **every step of the value chain**



PtX sustainability dimensions

The EESG Framework



Environmental

- Energy (renewable & additional)
- Carbon (closed cycle)
- Water management
- Land use & biodiversity
- Resources (Critical Raw Materials)
- Logistics: Toxicity & safety
- ...

Economic

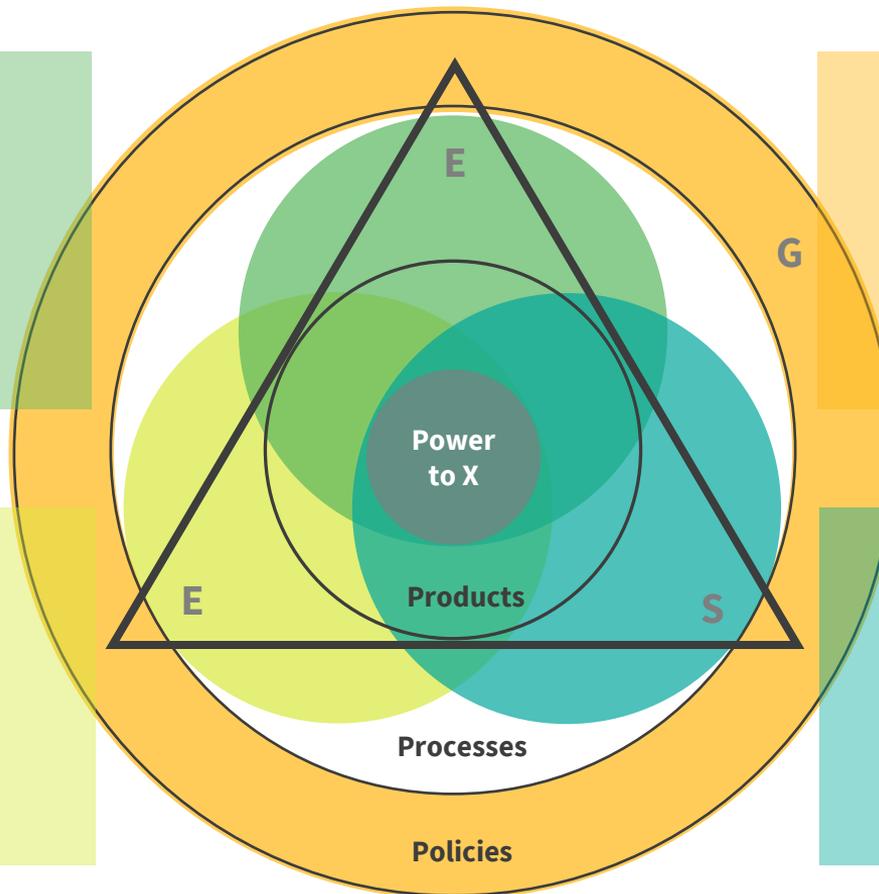
- Decoupled growth
- Local value added & employment
- Energy mix and transformation
- Innovation, R&D, Technology Transfer
- Infrastructure & logistics
- Trade in H2/PtX (EX-IM)
- Circular economy
- ...

Governance

- Political commitment and stability
- Multisector & multi-level co-operation
- Transparency & Rule of Law
- Ease of doing business
- Local / national ownership
- Community involvement
- Stakeholder participation
- ...

Social

- Access to energy and resources
- Human rights (UN FPIC)
- Labour standards (ILO)
- Jobs, skills and training
- Health and safety
- Just transition
- ...



Brazil – Potential for PtL SAF

High Renewable Energy Potential



>> 100 Remote Airports



Regional Aviation



- Legend**
- Waterways
 - Highways
 - Airports**
 - Public Airports
 - Private Airports
 - Heliports

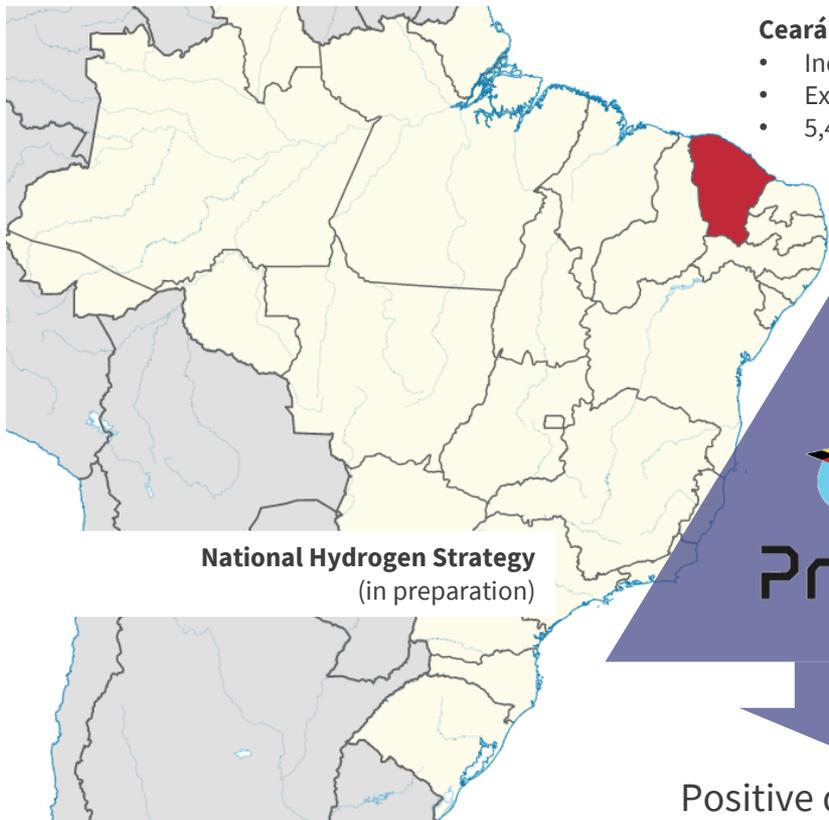
Elaborado por: ProQR
Fonte: ANAC, IBGE, ANTAQ

0 225 450 900 1.350 1.800
Kilometers

Bio Fuels - 22.4%



Current Developments



National Hydrogen Strategy
(in preparation)

Ceará Hydrogen Hub 02/2021

- Industrial Zone of Pecém
- Export infrastructure
- 5,4 Billion USD projects



National Future Fuel Program 04/2021

- Leadership in Energy Transition
- Integration of Public Policies for cleaner transport matrix
- Technical Committee (CT-CF)

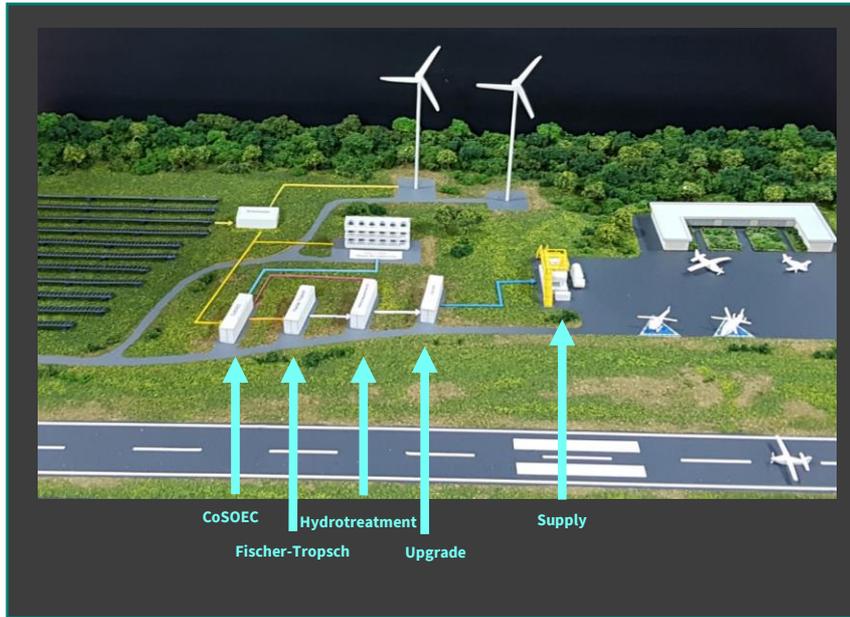


Positive dynamics to
overcome pandemic slow down

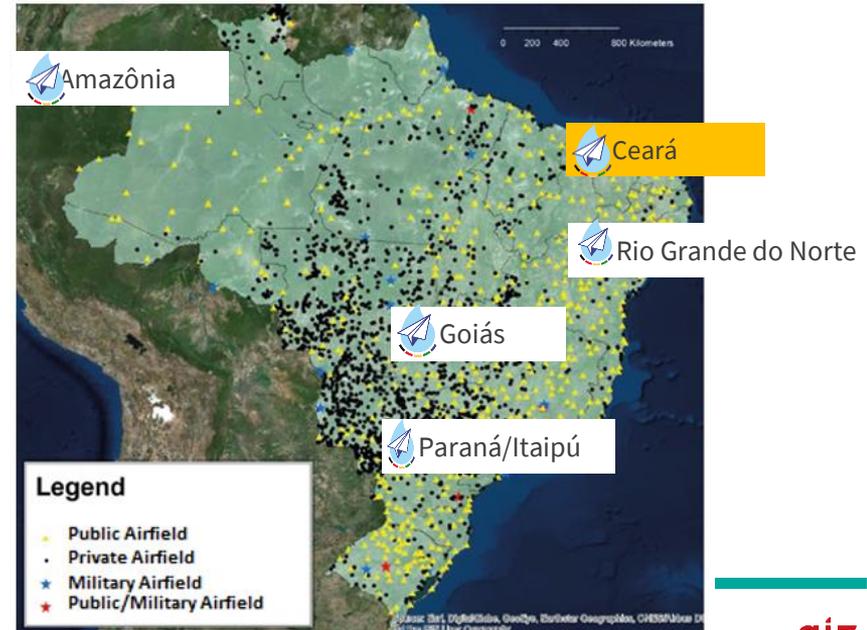
ProQR Climate Neutral Aviation Fuels – PtL-SAF-Project



- Pilot plant for decentralized fuel production in remote airport (PtL SAF)
- Regulatory advisory
- Studies on feasibility
- Collaboration with universities



Pro QR Pilot Plant Model



Locations of pilot plant negotiations

Thank you for your attention!



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SECRETARIA DE
EMPREENDEDORISMO
E INOVAÇÃO

MINISTÉRIO DA
CIÊNCIA, TECNOLOGIA,
INOVAÇÕES E COMUNICAÇÕES



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