

HINICIO I REGULATION & CERTIFICATION SERVICES



Are you aiming at understanding the regulation of target markets and to ensure your product's eligibility and thus its off-take?

WE HELP YOU TO UNDERSTAND TARGET MARKETS' REGULATION AND MAKE IT PART OF YOUR PROJECT'S DESIGN AND BUSINESS **CASE OPTIMIZATION**

Every project will rely on certification to capture the premium value of its product

- Non-certified low/zero-carbon products may face difficulties to find off-takers willing to pay premium-prices
- The target market's regulation and certification requirements should be integrated early in a plant's design to avoid future regulation compliance issues.



| Regulation (in force or proposed) | Driver for certification |
|-----------------------------------|--|
| RED II and RED III | Compliance with RFNBO targets and product eligibility criteria in transport and industry |
| Taxonomy | Compliance w/ GHG intensity limit for access to green finance |
| ReFuelEU Aviation | Compliance w/ obligations on RES & share of RFNBOs |
| FuelEU Maritime | Compliance w/ fuel mix GHG intensity reduction obligations |
| EU ETS extension to Maritime | Inclusion of maritime shipping fuels (emissions) under EU ETS |
| EU ETS – CBAM | Compliance with products' emission intensity thresholds defined by CBAM (includes ammonia and fertilizers, among others) |

A molecule, e.g. renewable Ammonia (NH3), has different potential premium target markets, depending on its end use and final application, among others:

- As industrial feedstock, driven by RED III
- As maritime fuel, driven by EUFuel maritime Directive



HINICIO supports you to:



Deeply understand the regulatory requirements of your product's target markets



Ensure compliance of your plant with the defined target market's regulation and product by



Optimizing the techno-economics of your project while achieving compliance with regulation







Regulatory framework and requirements

REDII, REDIII, FuelEU Maritime, ReFuelEU Aviation, EU Taxonomy, CBAM, ..., ...



Plant configuration & operating regime

Achieve regulatory compliance while optimizing the techno-economics of the project



We adopt a 3-step methodology to secure off-takers willingness to pay for your premium products when developing export projects to foreign markets











3. Elaborate Certification Strategy





<u>Project optimization</u> <u>and Pre-Certification</u>

Hinicio has developed a fivestep methodology to comprehensively improve regulatory compliance and certification for PtX project developers

STEP 1: SCOPING



Comprehending product features, project framework, and off-taker interest is strategic to priorilize between schemes and standards (regulated and voluntary markets)

STEP 2: REGULATION COMPLIANCE



Assessment of regulatory requirements relevant tor the target markets/ products and verification of compliance of the project with those requirements

STEP 3: PROJECT OPTIMIZATION



Going beyond Asset
Strategy and
including a more
detailed analysis of
energy input
requirements (e.g.
power, CO₂) to
produce the products
in compliance with
regulation

STEP 4: PRE-CERTIFICATION ASSESSMENT



Assessment of the plant design against certification criteria of selected scheme, recommendation of possible adjustments to secure compliance and de-risk final investment decision

STEP 5: ACTION PLAN

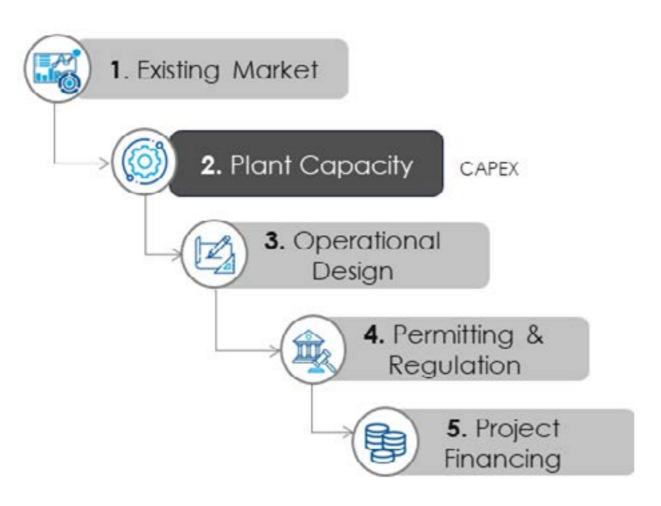


Get full clarity of next steps and set project development on the right track

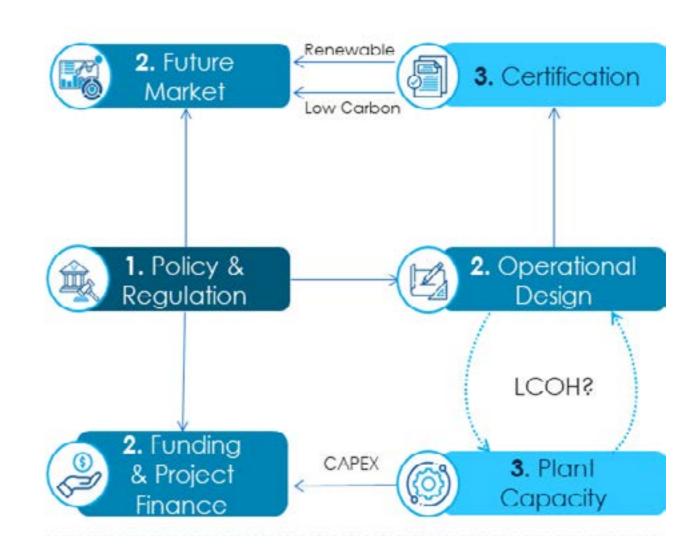
POWER-TO-X PROJECTS ARE DRIVEN BY POLICY & REGULATION

Hinicio leads project development by strategically understanding policy and regulation, and making certification part of market positioning, operational design, and financial performance.

Business As Usual: Capital Driven, Few Unknown, Incremental Approach



Power to X: Policy Driven, Several Unknown, Iterative Approach



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We assist our clients in answering questions such as:

- Which Market will you serve?
- What are the sustainability criteria the selected market defines?
- How do sustainability criteria and regulation affect your project design?
- Do you have the right (biomass/biogas/RE PPA/ CO2) feedstock available?
- What's your scale-up strategy?
- Have you optimized the system operation?
- Is technology of different vendors interchangeable?

Business Opportunity Identification

Regulation Compliance



Understand the regulation framework to take the right decisions

Business Optimization & Scope Definition

Project Optimization



Challenge the design and avoid further iterations

Budget Approval

Pre - Certification (Certification Pilot)





FID

Pre-certify your project to de-risk final investment decision

Project Maturity

Implementation

Project Management Consulting



Commissioning & Start-up

Certification



Access to premium prices

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challenge, applied to a first-of-a-kind System of Systems (that we all call Power-to-X)

High risk short -cut

• Value Statement: "Systems engineering aims to ensure the pieces work together to achieve the objectives of the whole".

HOW WE DO IT

HINICIO demand & market opportunity analyses



HINICIO Regulatory Compliance



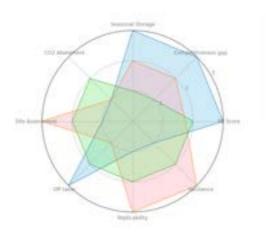
HINICIO Project optimization for Regulatory Compliance

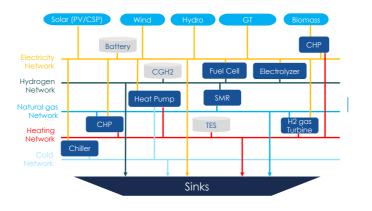
is not capable of

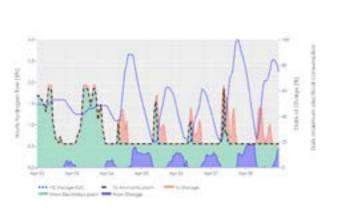
Systems Engineering can fill the

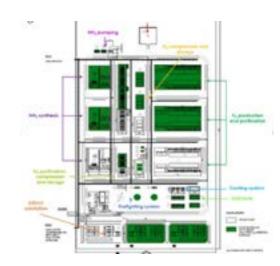
gaps that a traditional approach











Concept Screening

- What are my opportunities and offakers?
- What are the red-flags of my project?

Prefeasibility

- What is the optimum configuration?
- What is the best business case of my project?

Feasibility

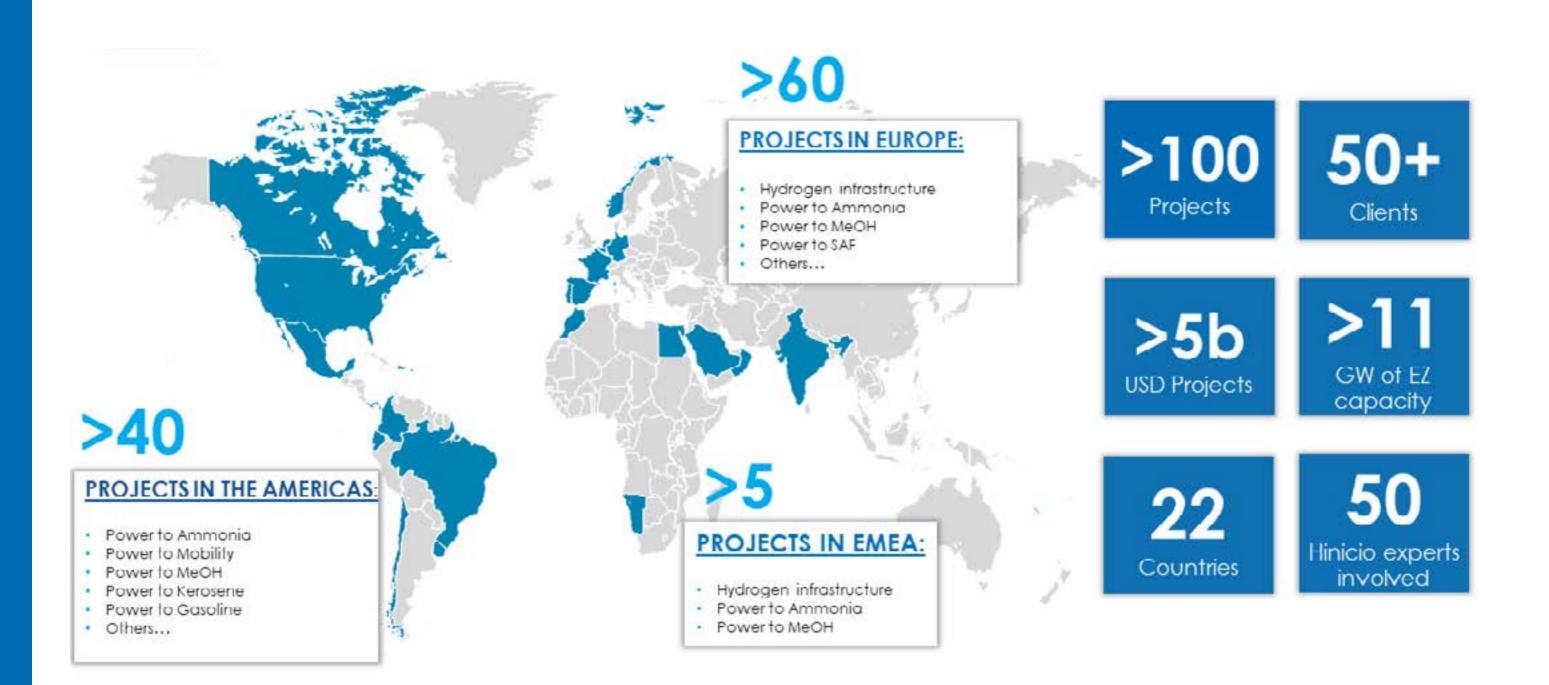
- What is the TIC Class IV estimate ft?
- What is the required equipment list?

Specification

- What is the TIC Class III estimate?
- What is the optimal contracting strategy?

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HINICIO'S PROJECT DEVELOPMENT ASSISTANCE APPROACH IS USED WORLDWIDE IN POWER-TO-X





We also advise policy makers and multilateral entities in H2 regulation and certification issues

Hinicio supports project developers and governments in designing their own, best fitting certification strategy

Regulation development

- Support in drafting decrees and other regulatory instruments related to H2
- Advise on H regulation and leaislation
- Analysis of regulatory impacts on Power-to-X projects

Certification system development

- Design, development and governance of a scheme:
- ✓ Support of Governmental Entities and Technical Working Groups by trainings on Certification
- ✓ Establishment of strategic Dialogues between policy makers and - Scheme Owners
- ✓ Design of key features considering different production pathways and product attributes

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We support several actors building their own certification schemes

2021



Design and piloting of **Ammonia Certification** Scheme for the EU

2022



Methodology Document for the AEA's Ammonia Certification Scheme 2022



Design and piloting of **Ammonia Certification** Scheme for the US

2022



Support with Clean Hydrogen Production Qualification and Definition. Carbon Intensity calculation guideline

White Martins produz primeiro hidrogênio verde certificado da América do Sul em

2023



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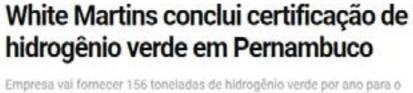
diary

Guidelines on Green Hydrogen Certification

Hinicio collaborated within the first green hydrogen certification in Latin America



Pernambuco



mercado estadual; eletrólise utilizará energia solar

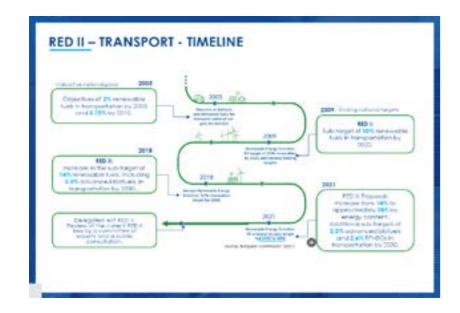


At Hinicio, we are happy to have assisted White Martins throughout their #hydrogen. life cycle determination by developing the Carbon Footprint Study according to ISO 14067. We applaud their #dedication to #sustainability and their contributions to a more environmentally-friendly future, and we are excited to see the positive impact of this achievement in the #decarbonization #strategies for the region.

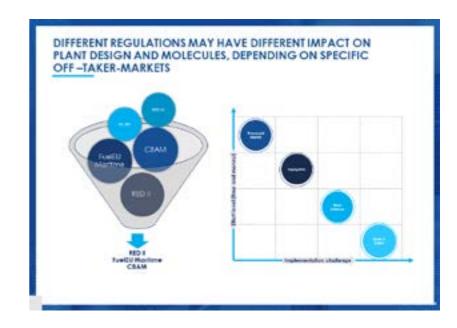
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SOME EXAMPLES OF OUR DELIVERABLES

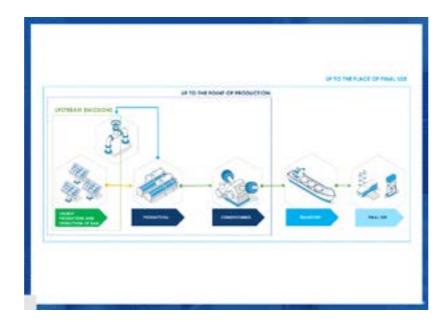
WHAT COULD YOU EXPECT FROM US

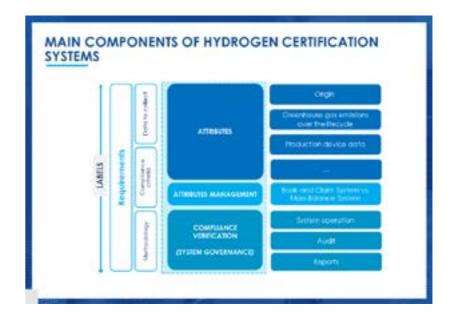












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WHY TO WORK WITH US

We have succesfully supported + 200 clients within their PtX project development, both from private as well as public sector along the whole hydrogen value chain.

WHO WE ARE



Hinicio is a leading technical and strategic consultancy specializing in hydrogen and its derivatives, sustainable mobility, and industry decarbonization. Our expert team advises governments, companies, and international organizations across Europe, the Americas, Asia, Africa, and the Middle East.

850+
PROJECTS

COUNTRIES

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HinicioSA

A PIONEERING VISION WITH A GLOBAL REACH