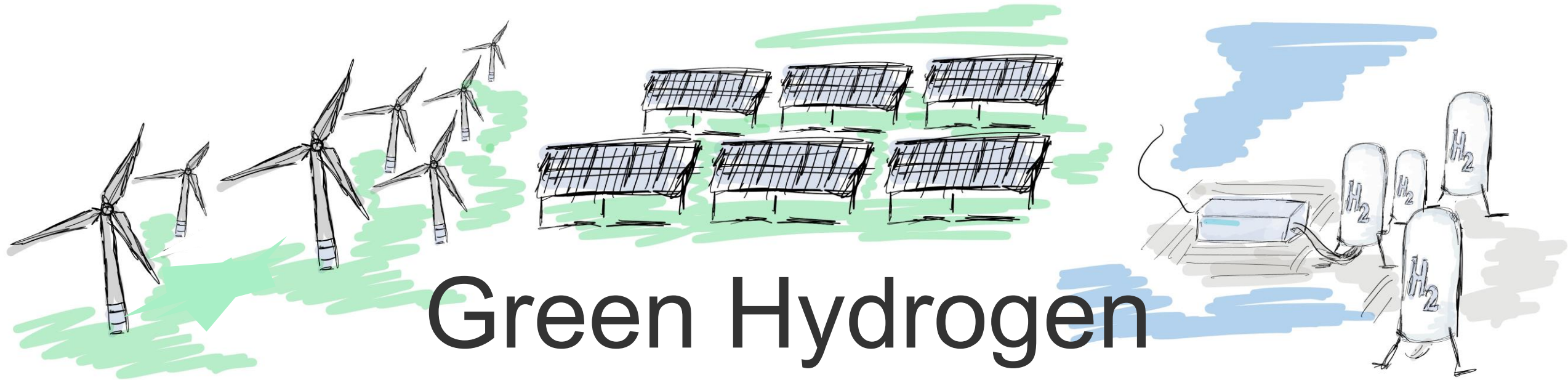




Green Hydrogen Economy

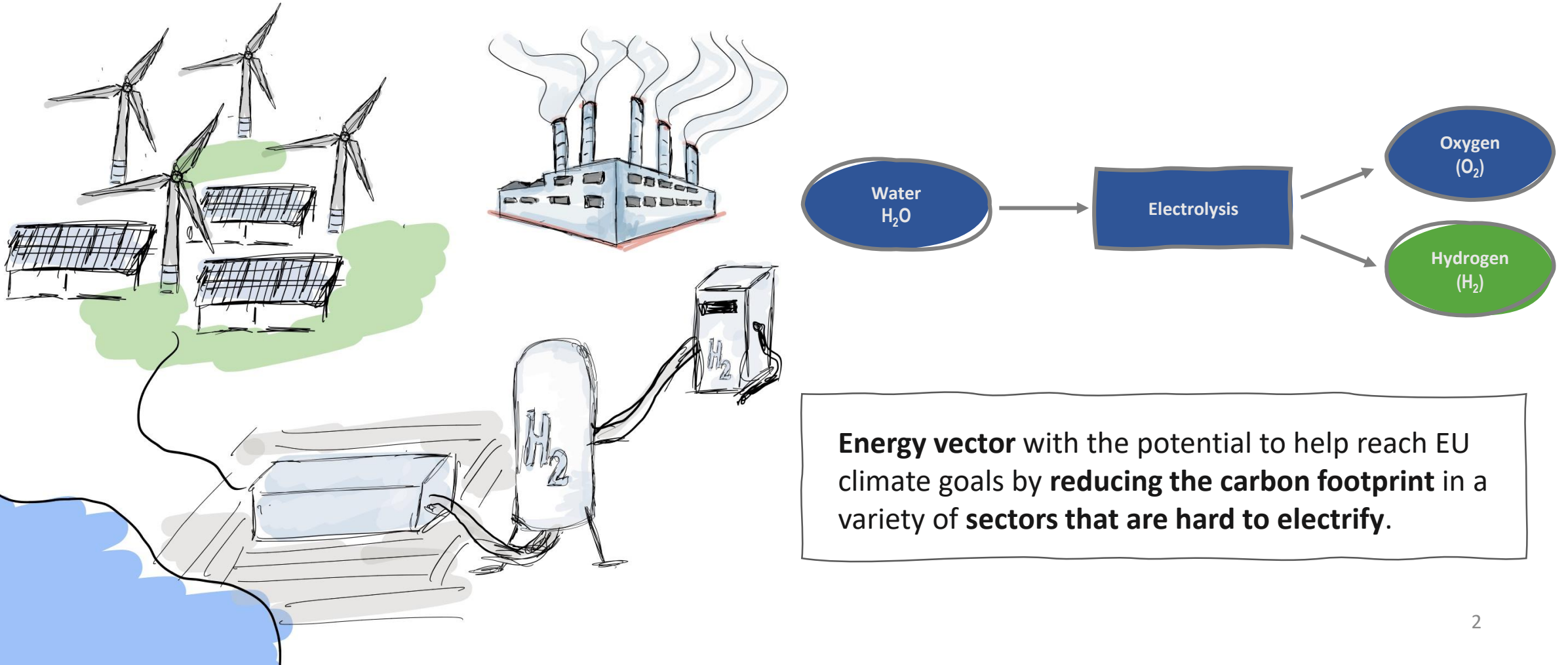
A legal take on the **feasibility of project development** under the current regulatory framework in Spain

Pia V. Kohrs

VII Tarragona International Environmental Law Colloquium (TIEC), 26 y 27 de mayo de 2022

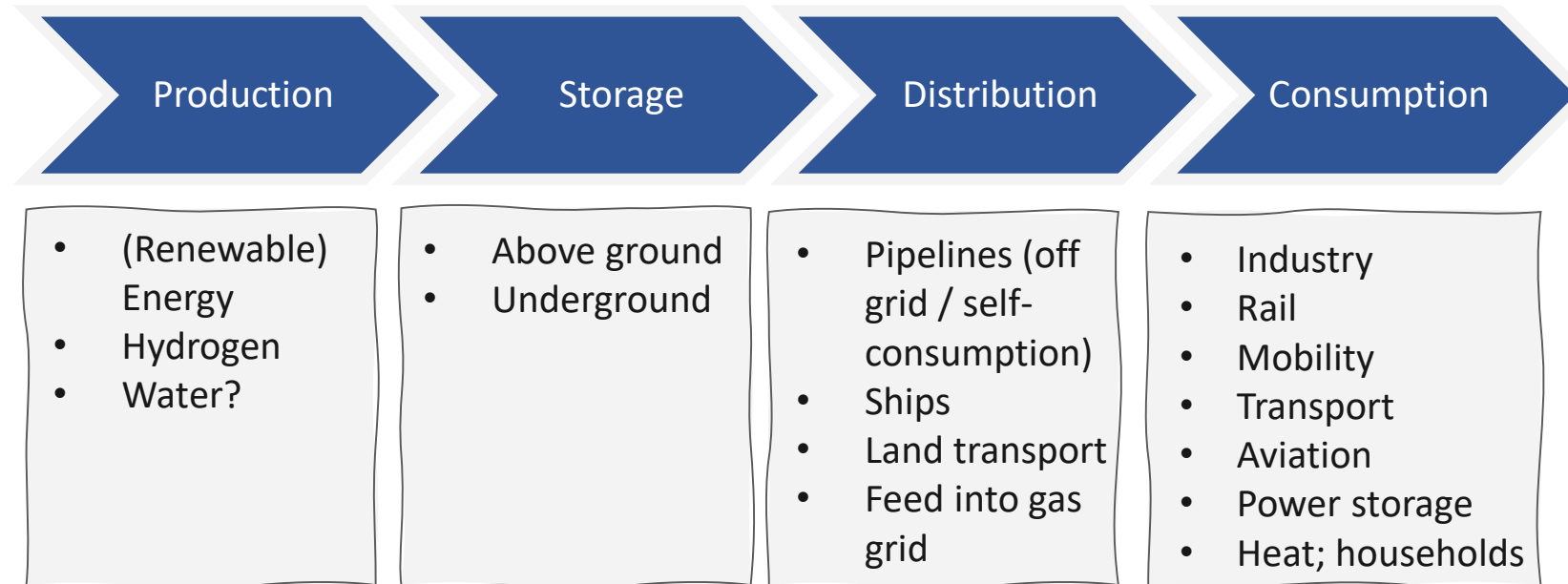
Green Hydrogen

Hydrogen molecules produced by separation of water into Hydrogen and Oxygen via electrolysis, using electric energy produced from renewable sources.

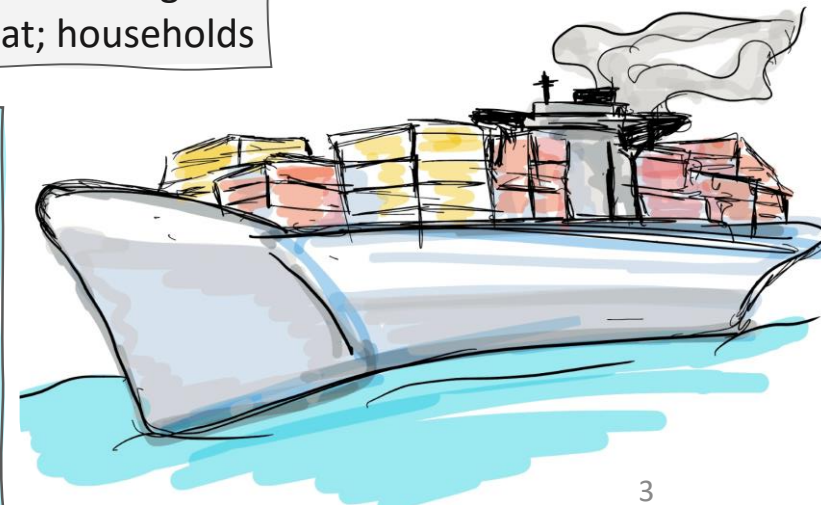


Energy vector with the potential to help reach EU climate goals by **reducing the carbon footprint** in a variety of **sectors that are hard to electrify**.

H₂ Value Chain



- “Chicken-and-egg”-problem. **Value chain integration** (sector coupling)
- The “bottlenecks”.
 - Financial feasibility
 - Technology
 - Talent
 - Permitting



Project Layouts

Example: Puertollano



Source: iberia.com, consulted on 23.05.2022



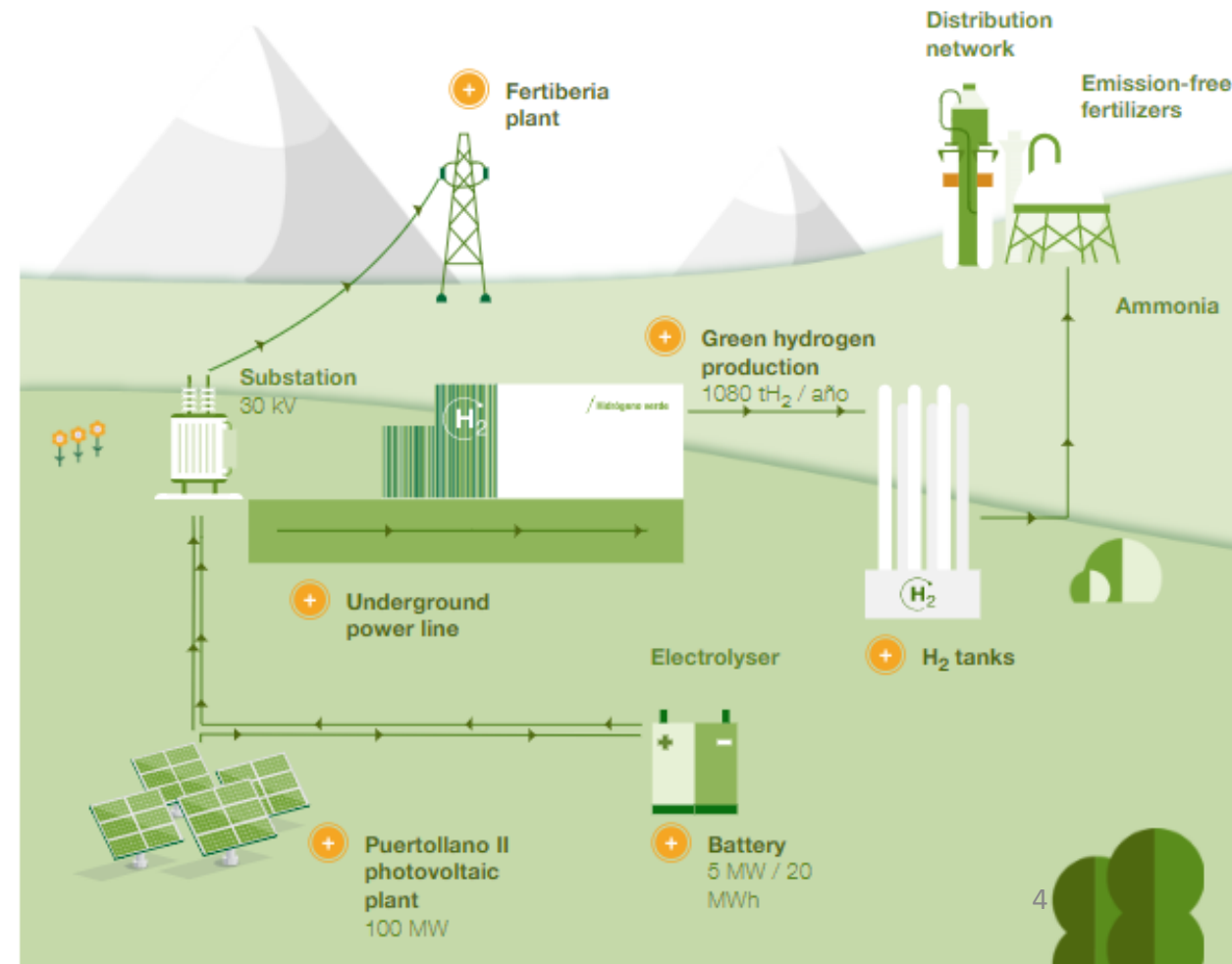
Investment
150 M€



Local jobs
1,000



CO₂ avoided emissions ⁽¹⁾
39.000
tCO₂/year



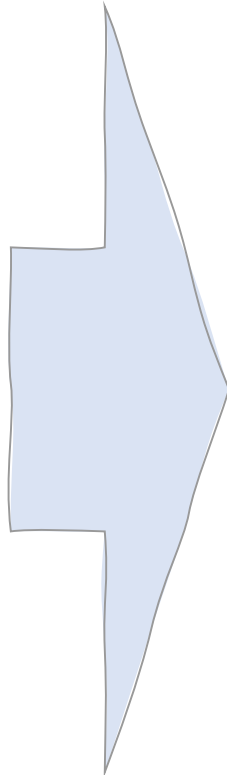
Project Development

(Practical Experience)

Consulting Authorities

July/August 2021

- Possible project for the **production of Green Hydrogen** in **Antequera** (Andalusia, Spain)
- Consultation to Ministry **MITECO** (bn-h2renovable@miteco.es):
 - Applicable legislation
 - Competent authority
 - Required permits and authorization (administrative/sectorial; urban; environmental)



- H2 production → **industrial activity** (*chemical industry for the production of inorganic gas*)
- **Industrial urban qualification** required
- Rigorous **environmental studies** (Ley 21/2013 (LEA))
- **Renewable energy** regulation applies (Ley 24/2013 (LSE); Real Decreto 413/2014). Request more information from *Dirección General de Política Energética y Minas* (MITERD)

NOT HELPFUL.

...to be continued!

Regulatory Framework

Environment

- DIRECTIVE 2011/92/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 13 December 2011 on the assessment of the effects of certain public and private projects on the environment
- DIRECTIVE 2010/75/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 24 November 2010 on industrial emissions (integrated pollution prevention and control)
- Real Decreto Legislativo 1/2016, de 16 de diciembre, por el que se aprueba el texto refundido de la Ley de prevención y control integrados de la contaminación (**LPCIC**).
- Ley 21/2013, de 9 de diciembre, de evaluación ambiental (**LEA**).
- Real Decreto 815/2013, de 18 de octubre, por el que se aprueba el Reglamento de emisiones industriales y de desarrollo de la Ley 16/2002, de 1 de julio, de prevención y control integrados de la contaminación (**Reglamento de Emisiones Industriales**)
- Real Decreto 840/2015, de 21 de septiembre, por el que se aprueban medidas de control de los riesgos inherentes a los accidentes graves en los que intervengan sustancias peligrosas
- Autonomous Regulation (Andalusia → Ley 7/2007, de 9 de julio de Gestión Integrada de la Calidad Ambiental)

Energy

- Ley 24/2013, de 26 de diciembre, del Sector Eléctrico (**LSE**)
- Real Decreto 1183/2020, de 29 de diciembre, de acceso y conexión a las redes de transporte y distribución de energía eléctrica
- Real Decreto 413/2014, de 6 de junio, por el que se regula la actividad de producción de energía eléctrica a partir de fuentes de energía renovables, cogeneración y residuos

Other

- Spanish Constitution
- Spanish Civil and Commercial Law
- Ley de 16 de diciembre de 1954 sobre expropiación forzosa
- Real Decreto Legislativo 2/2004, de 5 de marzo, por el que se aprueba el texto refundido de la Ley Reguladora de las Haciendas Locales
- Municipal regulations (Construction / Urban Licences; Construction Tax, Urban Planning, etc.)

Hydrogen

- DIRECTIVE 2009/73/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 13 July 2009 concerning common rules for the internal market in natural gas and repealing Directive 2003/55/EC
- Ley 34/1998, de 7 de octubre, del sector de hidrocarburos
- PD-01 Medición, calidad y odorización de gas, approved by Resolución de 21 de diciembre de 2012, de la Dirección General de Política Energética y Mina
- ISO 22734:2019 (*requisites for construction, funtioning and security of hydrogen generation equipment using electrochemical reactions to electrolize wáter and produce hydrogen and oxygen gas*) → not obligatory: Ley 21/1992, de julio 16, de Indutsria
- COUNCIL DIRECTIVE 96/61 /EC of 24 September 1996 concerning integrated pollution prevention and control (**IPPC**)
- REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 (**CLP – Regulation**)
- REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (**REACH**)

Regulatory Framework

Environment

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Hydrogen

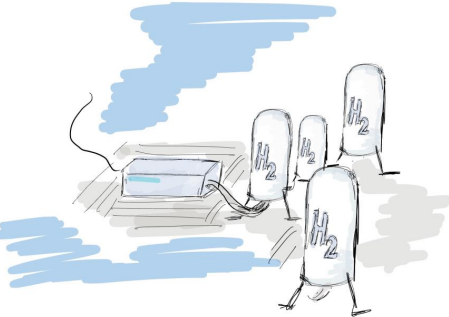
- DIRECTIVE 2009/73/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 13 July 2009 concerning common rules for the internal market in natural gas and repealing Directive 2003/55/EC
- Ley 34/1998, de 7 de octubre, del sector de hidrocarburos.
- Real Decreto 2362/1976, de 30 de julio, por el que se aprueba el Reglamento de la Ley sobre Investigación y Explotación de Hidrocarburos de 27 de junio de 1974.
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Permits & Authorizations

Milestone	Renewable Energy	Green Hydrogen
Land	Confirmation of urban planning suitability (Municipality)	Strategic positioning. Industrial qualification of land
Grid connection	Depending on connection point regular award procedure (grid operator); or public tender	Limited admissibility (5% concentration)
Environmental Impact Evaluation	Depending on Autonomous Regulation	EIA always required
Environmental permit (AAI)	Depending on Autonomous Regulation	AAI always required, subject to autonomous specifications
Sectorial authorizations	Preliminary administrative authorization (AAP); Administrative Construction Authorization (AAC); <i>Exploitation Authorization (AAE)</i>	If commercialized to consumers
Declaration of public interest (DPI)	DPI foreseen by law, requires specific declaration + formal procedure	DPI for renewable gas pipelines (since 2022)
Construction License	Depending on Municipality. Possible amendment of construction tax obligations	Depending on Municipality

Competent Authorities

Milestone	Renewable Energy	Green Hydrogen
Land	Municipality	Municipality
Grid connection	Grid Operator / Central Government	N/A
Environmental Impact Evaluation	Depending on sectorial authorizations	Depending on sectorial authorizations
Environmental permit (AAI)	Autonomous Community	Autonomous Community
Sectorial authorizations	Depending on project size / location.	Autonomous Community, with exceptions
Declaration of public interest	Depending on sectorial authorizations	Depending on sectorial authorizations
Construction License	Municipality	Municipality



Conclusions

- Diverse **competent authorities**, on different levels
 - Possible conflicts
 - Numerous points of contact
 - Technical preparation to effectively assist project developers
- **Separate regulatory bodies** for different parts of the same projects (*Renewable Energy and Chemical Industry*)
- Substantial **regional differences** in procedural + material aspects of the permitting process
- No differentiation of **projects**
 - Size
 - Technology
 - Application
- **Legal insecurity**
 - Regional inconsistencies
 - Legal gaps
 - Uncertain future developments

The current regulatory framework **negatively impacts** the feasibility of **Green Hydrogen projects in Spain**.

Thank you!

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