2023

Tackling climate change through fast and fair permitting for renewable energy and hydrogen: recommendations from the Planning for Climate Coalition

PLANNING FOR CLIMATE COALITION
GH2 Green Hydrogen Organisation
Global Renewables Alliance

"This is why I have proposed five concrete actions to jumpstart the renewable energy transition... reform the bureaucracies and red tape that hold up gigawatts of renewables projects. We need fast-track approvals for solar and wind projects and more effort to modernize electricity grids."

Antonio Guterres
UN Secretary General

"The amount of renewables needed to move away from fossil fuels is on a scale never seen before but we cannot fail. We need fit-for-purpose permitting processes which help rather than hinder the deployment of renewables and green hydrogen around the world and this Commission will deliver the recommendations to achieve that aim."

Malcolm Turnbull
Former Prime Minister of Australia and Planning for Climate Coalition member

A 9-point plan for fast and fair permitting

1. Innovate to shorten permitting timeframes.
2. Streamline permitting processes in a transparent and predictable manner.
3. Engage communities from the outset.
4. Deploy carefully designed and regulated benefit-sharing mechanisms.
5. Put in place strong policies and safeguards to limit environmental impacts.
6. Accelerate grid infrastructure build-out and integration.
7. Allocate land appropriately and strategically.
8. Strengthen and optimise institutional capacity at central and local levels.
9. Avert technological risks by adopting rigorous standards.

About the Planning for Climate Coalition

The Planning for Climate Coalition was launched at the COP27 UN Climate Conference in Egypt in November 2022 to raise awareness of the need for improved planning and approval processes for renewable energy projects and the green hydrogen economy.

The Commission is a joint initiative by the members of the Global Renewables Alliance (Green Hydrogen Organisation, Global Wind Energy Council, Global Solar Council, International Geothermal Association, International Hydropower Association and Long Duration Energy Storage Council.)

The Commission is made up of leaders representing governments, the private sector and civil society. It includes leading global institutions with mandates to promote renewable energy and experts on energy law and regulation.

Commissioners:

- **Mr Marco Alvera**, Chief Executive Officer, TES
- **Ms Elbia Gannoum**, President, Abeeolica
- **Dr. Ashok Khosla**, Indian environmentalist, former President of IUCN and Club of Rome
- **Mr Sanjay Kumar**, Deputy Secretary General, Climate Parliament
- **Ms Sabah Mohamed Mashaly**, Chairman & Managing Director, Egyptian Electrical Transmission Company
- **Mr Mads Nipper**, Chief Executive Officer, Ørsted
- **Ms Mary Quaney**, Chief Executive Officer, Mainstream
- **Ms Shalini Rajneesh**, Additional Chief Secretary to Government Planning, Programme Monitoring and Statistics Department, State of Karnataka
- **Hon Teresa Ribera**, Minister for the Ecological Transition and the Demographic Challenge, Government of Spain
- **Dr Lisa Sachs**, Director, Columbia Center on Sustainable Investment
- **Mr José Ignacio Sánchez Galán**, Executive Chairman, Iberdrola
- **Mr Jackson Shaa**, Executive Director, Narasha Community Development Group
- **Mr Erik Solheim**, GH2 advisor and former Minister of Development and Climate of Norway
- **Hon Malcolm Turnbull**, GH2 Chair and former Prime Minister of Australia
- **Lord Adair Turner**, Chairman, Energy Transitions Commission
- **Ms Nangula Uaandja**, CEO & Chairperson, Namibia Investment Promotion & Development Board
- **Mr Maarten Wetselaar**, Chief Executive Officer, CEPSA
- **Hon Kandeh Yumkella**, former CEO of the Sustainable Energy for All Initiative and former Chairman of UN-Energy

With support from an Expert Advisory Group, a set of challenges and draft recommendations to improve the planning and permitting procedures for renewable energy initiatives has been put forward for consideration. The Green Hydrogen Organisation provides secretariat support for the Commission.

Foreword

A tripling of the renewables capacity - annual deployment to scale up to 1,000 GW of renewable power – is needed by 2030 to stay on a 1.5°C pathway. To achieve this, there must be a significant increase in renewable energy deployment and the installation of transmission lines and other infrastructure like hydrogen pipelines and ammonia plants. Such projects require approval from host governments and support from local communities, but the lengthy approval process in many countries poses a significant challenge.

The transition from fossil fuels to renewable energy and green hydrogen is critical for sustainable development. Research by the International Energy Agency and others emphasizes the importance of streamlined and speedy permitting and licensing for such projects in preventing climate disaster[1].

Renewable energy and green hydrogen infrastructure require significant investment, and their construction involves complex technical and environmental assessments. Without efficient planning and permitting processes, the approval of such projects may take a long time, causing delays in their implementation. Speeding up permitting for grid access is also urgently needed to connect new renewable energy capacity being built out.

The scale up of renewable energy capacity cannot happen without strong acceptance, consent and buy-in from local communities. However, public resistance against large-scale renewable energy projects have delayed projects and strained community relations.

It is because of these challenges that the Planning for Climate Coalition aims to highlight the importance of effective planning and permitting practices that not only move faster, but also move together with communities and citizens to build trust and social acceptance. We aim to bring together knowledge about how to speed up permitting procedures and hard-won lessons about community engagement from other sectors like the extractive industries.

Significant policy, research and advocacy efforts have been invested in making planning and permitting more efficient. Instead of replicating these efforts, the Planning for Climate Coalition seeks to build on and amplify the existing good practices and tools by institutions such as the International Energy Agency, International Renewable Energy Agency, Energy Transition Commission, Eurelectric, European Clean Hydrogen Alliance, European Commission and World Resources Institute. The Columbia Center on Sustainable Investment has also prepared important research and guidance on the use of benefit sharing programs in connection with renewable energy and green hydrogen projects, including the report on “Community Benefit Sharing and Renewable Energy Projects."[2]

As we launch these recommendations and expand this coalition of government, industry and community leaders, we look forward to driving the global push towards faster and fair permitting together.

Malcolm Turnbull
Chair of Green Hydrogen Organisation and Planning for Climate Coalitioner

1. International Energy Agency. Renewables 2022. December 2022. Available at: https://iea.blob.core.windows.net/assets/ada7af90-e280-46c4-a577-df2e4fb44254/Renewables2022.pdf
2. Columbia Center on Sustainable Investment. (forthcoming publication).

Summary

In this report the Planning for Climate Coalition presents recommendations for how to make planning and permitting for renewable energy and green hydrogen projects faster and fairer. Tripling the renewables capacity- annual deployment to scale up to 1,000 GW of renewable power is needed by 2030 to stay on a 1.5°C pathway.[3] This unprecedented level of scale up, equivalent to installing over 300 million solar panels or 300,000 large wind turbines each year, or to build as much hydropower in the next 30 years as we have done in the past 100 year will require fast approval by hosting governments and consent by communities.

In many jurisdictions, it takes longer to get permission to build a large-scale renewable energy project than it takes to build it. This is time we cannot afford to waste in the battle against climate change.

Delivering fast and fair planning and permitting is a global challenge. It is a major issue across developed and developing economies, from Europe to the US, Japan to Vietnam, Mexico to Kenya.

There are many good examples of how planning can be accelerated, and trust can be built with communities. Through this report we hope to share some of these examples, so that we can learn faster from each other. We can also do more collectively to ensure that national policies and permitting procedures are implemented at the regional levels.

We are creating a community of government officials, developers, and community organisers from around the world. We hope that the brief examples of good practices we have included in this report are only the beginning of us all capturing and sharing ways that work together.

The world urgently needs to speed up planning and permitting for renewable energy and green hydrogen infrastructure and networks in close consultation with citizens and communities. There are good, emerging policies and administrative practices across the world that can be shared and scaled up so we can move faster, together.

While some planning and permitting procedures need to be simplified to ensure shorter lead times, measures to gain social acceptance and community consent cannot be compromised. This will be critical to secure social acceptance and license to operate as renewable energy deployment is significantly ramped up in the race to 2030 and beyond. It will require active engagement by governments with the private sector and local communities to facilitate meaningful consultation processes.

In addition, we need both intermittent and firm energy sources plus some amount of storage to have a functioning grid. Planning for wider infrastructure that support the production and distribution, e.g. grids and storage systems, will be needed to decarbonise the global economy. Grid distribution and storage, hydrogen transport infrastructure and green ammonia plants will also need to be treated as an overriding public interest for the world to meet net zero targets. This report outlines nine sets of actions and recommendations for fast, effective and trust-building permitting:

1. Innovate to shorten permitting timeframes.
2. Streamline permitting processes in a transparent and predictable manner.
3. Engage communities from the outset.
4. Deploy carefully designed and regulated benefit-sharing mechanisms.
5. Put in place strong policies and safeguards to limit environmental impacts.
6. Accelerate grid infrastructure build-out and integration.
7. Allocate land appropriately and strategically.
8. Strengthen and optimise institutional capacity at central and local levels.
9. Avert technological risks by adopting rigorous standards.

3. IRENA World Energy Transitions Outlook 2023

CHALLENGE

Permits take too long to obtain.

RECOMMENDATION 1

Innovate to shorten permitting timeframes.

Faster permitting is essential to accelerate the development and deployment of renewable energy projects and keep projects viable within budget.

1.a. Establish clear timelines.

Governments must establish clear timelines for the permitting process, with specific deadlines for each step of the process of renewable energy and green hydrogen production. This will help reduce delays and ensure that projects are completed on time and within budget.

To avoid unnecessary delays, legally mandated timeframes that set maximum limits for renewable energy projects should be set. This helps to ensure predictability in the process.

To further ensure the adherence to these legally mandated timeframes, a regulatory framework should include penalties for government agencies or entities that fail to meet the specified deadlines. These penalties could include fines, project suspension, or even legal action, providing a strong incentive for timely processing of renewable energy permits.

The **European Union** has set specific guidelines through the Renewable Energy Directive, which requires member states to streamline the permitting process and establish transparent procedures.

For instance, the EU directive sets a maximum limit of 2 years for the entire process from initial application to final approval for new projects and 1 year for repowering projects, aiming to ensure timely project completion and reduce unnecessary delays.

1.b. Digitised permitting.

The use of digital technologies in e-government processes is important in improving the efficiency of permitting processes. This involves improving speed, enabling seamless sharing and coordination among various government entities, and backing the adoption of a streamlined approach such as a centralized permitting system under a designated authority.

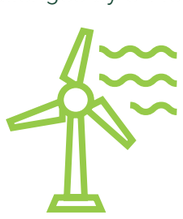
Estonian Environment Information Centre

In **Estonia**, the government has established a highly advanced e-government system. In the renewable energy sector, they have developed an online platform called "Estonian Environment Information Centre" (Keskkonnaagentuur), which serves as a centralized hub for permitting and environmental impact assessment procedures. This platform allows developers to submit applications, track the progress of their permits, and receive notifications electronically.

In Philippines, the **Energy Virtual One-Stop Shop (EVOSS)** System is an online system that allows the coordinated submission and synchronous processing of all required data and information, and provides a single decision-making portal for actions on applications for permits or certifications necessary for, or related to, an application of a proponent for new power generation, transmission, or distribution projects.

1.c. Set targets to cut application processing times by half.

The Energy Transition Commission suggests that with streamlining the process, wind and solar projects could be deployed in half the time. Site mapping and selection could be reduced by 2 months-1-year, environmental surveys could be reduced by 1-1.5 years, permit applications by 1-2.5 years, obtaining grid connectivity could be reduced by 1 year 3 months to 3 years and legal challenges by 3-7.5 years.



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Offshore wind

From a 12 year indicative timeline to a 5.5 year expedited timeline.

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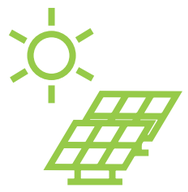
Onshore wind

From a 10 year indicative timeline to a 4.5 year expedited timeline



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Solar

From a 4 year indicative timeline to a 1 year expedited timeline.

> “We need a fundamental review on how we dramatically shorten the consenting process”
>
> **Mads Nipper**
> CEO of Ørsted and Planning for Climate Coalition member

1.d. Adopting a “rule of positive silence”.

For smaller-scale projects that meet certain criteria, permits could be granted on a no-objection basis.

GOBIERNO DE ESPAÑA

The Spanish government has an ongoing trial of ‘the rule of positive silence’ until 2024. This rule automatically grants permits for solar PV and wind projects under a certain size if they meet certain criteria and no objection is made against the application within 2 months.

1.e. Assign priority status to renewable energy, green hydrogen projects and related infrastructure.

Assigning priority development status to renewable energy projects can expedite the often-lengthy permitting process. This designation signals the importance of renewable energy and allows for streamlined review and approval procedures. However, it is crucial to ensure that important caveats, such as environmental impact assessments and community consultations, are still respected. Balancing speed and thoroughness are vital to promoting sustainable and responsible renewable energy development.

In 2021, the **Brazilian government** entered into an agreement with **TVP Solar**, a Swiss company producing solar thermal panels that generate heat for industrial processes. This agreement involved a five-year allocation of zero-import duties on the import of their equipment.

This achievement was made due to the strategic role of the solar thermal panel equipment in the decarbonization of industrial plants, where no comparable local solutions existed. This solution not only leads to reduced operational expenses and stabilized annual energy costs for plant owners, but can also enhance local worker safety and employment opportunities in the importing country.

The outcome of this decision was the installation of TVP Solar's solar thermal equipment at a **Pepsi Cola** plant in Sete Lagoas. This installation translates to an annual savings of 55,200 cubic meters of natural gas and a reduction of 103 tonnes of CO2 emissions each year. Another plant located in Feira de Santana is in its final stages of implementing the same solution, projecting an annual CO2 reduction of 295 tonnes per year. Pepsi Cola has plans to replicate this model at additional locations. Given the 25-year lifespan of these solar panels, the cumulative reduction in CO2 emissions is measured in megatons. Furthermore, since these panels do not require cleaning to deliver heat, they also contribute to water conservation.

The European Union considers planning, construction and operation of plants and installations to produce renewable energy to be in the “overriding public interest”. Member states can allow projects in certain parts of their territory or that deploy certain types of technologies or projects to benefit from a simplified assessment for a number of environmental obligations included in specific EU directives.

While providing import duty exemptions for priority renewables projects and their associated equipment can expedite the introduction of renewable energy technologies, care should be taken. These exemptions, although potentially reducing costs by up to 25% in certain nations due to the weight of import duties on foreign technology, should not inadvertently promote activities that might negatively impact local communities or ecosystems. It's noteworthy that in Kenya, Kengen has had several disputes with local communities over its geothermal, hydro, and wind power projects, indicating the potential significant adverse effects these projects can have.

When considering the expansion of existing projects, while it may be tempting to exempt them from new permitting requirements or the need for Environmental Impact Assessments (ESIAs), it is essential to proceed with caution. A mere assertion of no pollution or detrimental ecological impact should not be sufficient for exemption. It is critical to protect the interests of local communities and ecosystems. For projects that genuinely have minimal impacts, like off-stream pumped storage projects which affect stream characteristics or hydrology to a lesser extent, different permitting considerations than those for conventional hydro-power projects might be justified. But it's vital to ensure that we do not compromise the safety and well-being of the environment or the people living within it.

India: In April 2023, Ministry of Power released new guidelines for pump-storage projects (PSPs): At present, the environmental clearance and forest clearance process of PSPs is very cumbersome, since these projects are treated at par with the conventional hydro projects for the purpose of grant of Environment and Forest Commissioning. The environment impact of PSPs constructed on existing reservoirs on on-the-river sites and on the off-the-river sites is much less than conventional hydro-power projects. Therefore, under the revised guidelines, PSPs constructed on existing reservoirs and on off-the-river sites will be treated as a separate category for processing of clearances.

In addition, given the importance of facilitating RE integration in the grid and in pursuance of **National Tariff Policy 2016,** waiver of ISTS and other transmission charges have also been made available to Pumped Storage Projects.

1.f. Setting strategic vision for renewables deployment.

It is important to set a clear strategic vision for renewable energy with medium-term deployment targets; to coalesce government, industry and all other stakeholders around this tangible aim, to help set policy, drive investment, and build network infrastructure where it is needed.

The United Kingdom established a clear strategic vision for offshore wind, with a medium-term target of 50GW by 2030, and has become a world leader in deployment of this technology, as the target gave certainty to all stakeholders to make investments happen. However, it did not create this vision, or set medium-term targets for onshore wind and solar, and progress here has been very slow.

China; 5-year plans are set out every 5 years; and clear targets of 1,200 GW of wind and solar capacity by 2030 set into law. The government and industry had these clear targets to focus their efforts around, and they are now forecast to hit these levels a whole 5 years early. Without initial wind and solar targets and the strategic vision to get there, this would not be possible.

CHALLENGE

Renewable energy and hydrogen permitting processes are cumbersome.

RECOMMENDATION 2

Streamline permitting processes in a transparent and predictable manner.

2.a. Streamline framework.

There is a need to clarify and streamline the regulatory and legal framework at all levels. It is crucial to establish well-coordinated and explicit protocols for handling renewables and green hydrogen initiatives, so that authorities that are in the learning process can respond to developers' inquiries and ensure certainty. The permitting process should be as uniform as possible across regions within the country with single application processes.

2.b. One-stop-shop permitting.

Governments should consider implementing a one-stop-shop approach to permitting, where companies can communicate on all necessary permits and approvals with a single, designated agency or department.

A one-stop-shop permitting approach consolidates the permit acquisition process for businesses into a single designated agency or department. This streamlined approach brings several benefits. It simplifies the permitting process by eliminating the need to navigate multiple agencies, reducing administrative burdens, and saving time. Businesses can submit applications, provide necessary documentation, and receive approvals more efficiently.

Moreover, this approach promotes cost savings by minimising delays and duplicated efforts, reducing expenses associated with prolonged permitting processes. It enhances transparency and accountability by providing a single point of contact for businesses, offering clearer guidance and better communication.

Additionally, a one-stop-shop approach encourages business growth and investment by removing barriers and providing a smoother permit acquisition process. It also improves government efficiency by optimizing resource allocation, streamlining internal processes, and improving interagency coordination.

The benefits of such an approach, including simplified processes, reduced administrative burdens, and enhanced transparency, make it an attractive option for both businesses and governments.

Danish Energy Agency

The **Danish Energy Agency** functions as a one-stop-shop for Offshore Wind Farms, a centralised authority for granting licenses and permits for offshore wind farm development in the North Sea. It streamlines the consenting process by coordinating with various authorities, sharing project-specific knowledge, and mitigating conflicting interests. This one-stop-shop approach reduces regulatory risks, facilitates effective communication, and ensures a comprehensive approach to planning, developing, commissioning, operating, and decommissioning offshore wind farms.

Similarly, the European Union has a Flagship Technical Support Project which supports its member states in setting-up and improving digital one-stop-shops for project developers and developing single application processes.

In **India**, a legally mandated GIS-based multi-layered **Decision Support System** is being used by permitting authorities for integrated environment, forest, wildlife / bio-diversity, coastal zone clearances under the new **PARIVESH portal of Indian Ministry of Environment, Forest & Climate Change.**

"It's not just about regulations, but also about how you, as a government, deal with these [renewable project approval] processes. How do you make sure that when the contractor does this project, they can do it as quickly as possible?"

Dan Jannik Jørgensen
Minister of Climate and Energy and Public Utilities, Denmark

2.c. Create a renewables project data observatory.

The creation of a renewable project data observatory with numerous permitting metrics would involve the establishment of a comprehensive platform or a system to collect, analyse, and monitor data related to renewable energy projects and their associated permitting processes.

Without data, identifying bottlenecks and effective target enforcement becomes challenging within each system. Renewable energy project developers possess digital databases of their projects detailing permitting stages, construction timelines, and projected energy generation. Governments could request this data from project developers, aggregate it and present it transparently to stakeholders. This wouldn't be technically complex, however, but necessitates political determination and allocation of resources. This endeavor could be greatly advantageous for all stakeholders.

Data collection includes information on project locations, types, capacities, developers, and milestones. Additionally, it would gather permitting-specific data such as application timelines, approval processes, environmental assessments, and regulatory requirements. All collected data stored in a centralised database will be accessible to relevant stakeholders, such as government agencies, energy companies, researchers, and policymakers. The observatory also enhances transparency and promotes collaboration among various actor fostering an efficient permitting system

"The Government of Spain also considers it essential to process applications for renewable energy and green hydrogen projects quickly and to establish a favorable regulatory framework for those projects that are essential to accelerate the energy transition."

Teresa Ribera
Minister for the Ecological Transition and the Demographic Challenge of Spain

2.d. Standardise permits for green hydrogen plants.

According to the European Clean Hydrogen Alliance, most European countries is missing a specific and tailored permitting framework for the production, transportation, storage, or use of green hydrogen and ammonia. This poses a lack clarity on the relevant authorities, timelines, applicable processes. Standardised permitting processes, with hydrogen permitting manuals, checklists of required permits and approvals, along with estimated processing times and costs would help guide project developers and investors. A designated lead authority in charge of hydrogen project permitting should develop guidelines for project developers in close coordination with relevant government agencies and regional authorities.

2.e. Flexible permitting for different projects.

Flexible permitting for different projects refers to a permitting process that can accommodate a range of projects with varying sizes, specific locations, and considerations for nature-based disasters. The goal is to ensure that the permitting process is adaptable and can effectively address the unique characteristics and potential risks associated with different types of projects.

By incorporating flexibility into the permitting process, authorities can better align regulatory requirements with the specific characteristics and potential risks of different projects. This approach ensures that projects can proceed efficiently while still adhering to necessary standards for environmental protection, public safety, and community resilience. It also allows for a more nuanced evaluation of each project's impact, considering its unique context and circumstances.

Flexible permitting processes in the **United States** accommodate projects of different sizes and locations, considering risks from nature-based disasters. The Federal Energy Regulatory Commission (FERC) plays a key role in regulating the flexible permitting process of renewable energy projects at the federal level.

CHALLENGE

Public concerns over renewable energy and green hydrogen projects. Without public support and community consent, developing renewable projects will not be sustainable.

RECOMMENDATION 3

Engage communities from the outset.

3.a. Clear policy approach.

Governments should create policy frameworks to ensure that community consultations are broadly inclusive of and genuinely accessible to all community's members. Governments that want to ramp up the development of renewable energy projects need a strong and coherent policy approach to addressing the rights, expectations, and perspectives of directly impacted communities. Besides setting up a structured process with the involvement of major stakeholders, there should be clear guidance on the priorities that should guide community benefit-sharing programs.

Where government actors lead community consultations directly, robust national-level policies should be in place to shape them. Where project developers carry out community consultations themselves, government policies should regulate those consultations and ensure they are meaningful and in good faith and take effective steps to ensure and monitor compliance. Additionally, policies should ensure that this process adheres to specified timelines.

The communication regarding the transformation of energy systems after the integration of renewable energy in certain countries is riddled with inconsistencies and deficiencies. The energy sector and relevant national authorities responsible for energy and ecological transition tend to engage in communication only during urgent situations. The intricate nature of the subject matter coupled with limited information accessibility creates significant challenges for both consumers and institutional investors to grasp the precise details of the Net Zero national commitment's execution plan. Highlighting the significance of a just transition in coal regions, especially in countries like Spain, can foster social acceptance of renewable energy by addressing concerns about potential job losses in coal communities.

Effective communication necessitates transparency and consistency throughout an extended timeframe. However, in numerous instances, it remains sporadic, perplexing, and comes with a high cost of access.

Spain: The territories have their say. Social participation in Just Transition Agreements.

The Just Transition Agreements (JTAs) begin with the creation of socioeconomic diagnoses in respective regions, involving public participation to gather ideas for revitalizing these areas, resulting in over 2,000 proposals from 800 participants.

A wide range of stakeholders, including businesses, local authorities, unions, universities, NGOs, and more, participate in the process, with specific frameworks for youth and women's involvement. Ongoing gatherings and newsletters keep stakeholders informed about progress and support instruments for economic revitalization in JTAs.

Territorial agents from the Just Transition Institute continuously engage with local actors, helping match projects with suitable support instruments, particularly benefiting SMEs and small municipalities. This approach fosters a bidirectional, sustained dialogue between civil society and public administrations in Spain's public participation experience, promoting constant exchanges and collaboration.

3.b. Engage early.

Getting local stakeholders involved in the siting and permitting process early on can help ensure that renewable energy projects align with the needs of the community and build support for the development. Local ownership models, such as public-private partnerships, cooperatives, community trusts, and customer-owned enterprises, can be used to mobilize local support and involvement in decision-making. Investment in community engagement at an early stage sets projects up for long-term success.

Before a renewable energy project is initiated, governments can lay the groundwork for success by engaging local communities. One such step is to engage local communities through participatory siting approaches and proactive management of economic concerns and land-use risks.

Citizens need credible, understandable, and timely information- the support from central administration of government to bring awareness about the importance of renewables deployment and energy transition is a key first step here.

In addition, renewable energy projects will have an impact on training and employment, development of local suppliers, integration of existing economic activities (grazing, beehives, etc), fiscal contributions (taxes). Communicating these benefits is also a source of early community engagement.

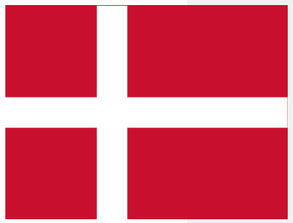
According to the developer of the **Cochrane Wind Farm in Ontario, Canada, Cochrane Power Corporation (CPC)**, community engagement played a crucial role in the planning and permitting process. The project developer, along with local authorities, conducted multiple public consultations and engagement sessions to involve the community in decision-making. The developer organized open houses, public meetings, and workshops to share information about the project, address concerns, and gather feedback from residents. Through these engagements, the project team was able to identify and address community concerns, such as visual impact, noise, and potential effects on wildlife. The input received from the community helped shape the project's design and implementation, ensuring a more acceptable outcome for all stakeholders involved.

3.c. Preliminary surveys to assess attitude towards a project.

Regional authorities and project developers can use preliminary surveys to gather baseline data on their perceptions, knowledge, and opinions regarding a planned or proposed project. The surveys typically include questions related to attitudes towards renewable energy, concerns or reservations about the project, expectations, and potential benefits or drawbacks. The results of these surveys help authorities and project developers understand the existing attitudes and concerns, identify areas of support or resistance, and tailor communication and engagement strategies and address any potential issues.

3.d. Financial incentives at the local level such as power rebates.

Public financial incentives should be made available to local municipalities willing to play host to large-scale renewable energy projects. This could either come from the national government in the form of extra funding, or a compulsory fee or a local tax on the project. In numerous countries, renewable projects already pay specific taxes, such as construction and installation work taxes, real estate taxes, and so on.



Denmark's green fund: Denmark's 2008 Promotion of Renewable Energy Act requires developers to give local citizens the opportunity to own a portion of a project by allowing them to buy shares equivalent to at least 20% of the project's value. Denmark's green fund scheme, set up in 2020, funds paid by project developers are administered by the municipalities hosting the projects.

An individual landowner's co-investment in partnership with the developer either for a monetary return like in Denmark's 2008 Promotion of Renewable Energy Act, or for a discount on their utility bill such as in Colorado's 2010 Community Solar Gardens Modernization Act (amended in 2019).

Ørsted's Plum Creek Wind Project: Ørsted announced that it had signed an agreement with a group of Iowa landowners to lease their land for the construction of a new wind farm. The wind farm, called the **Plum Creek Wind project**, where landowners will receive annual payments for hosting the wind turbines on their land. The exact amount of the payments was not disclosed, but it is typical for lease agreements to provide payments in the range of $5,000 to $10,000 per turbine per year. In addition to the financial benefits, the landowners will also benefit from the environmental advantages of hosting the wind farm.

> "There is a task force required in every government right now that needs to accelerate permitting."
>
> **Henrik Andersen**
> Chief Executive, Vestas

The farm will consist of 82 wind turbines with a total capacity of 230 MW. The project is expected to generate enough electricity to power approximately 90,000 homes.

The Plum Creek Wind project is expected to offset approximately 560,000 tons of carbon dioxide emissions each year, which is equivalent to taking more than 120,000 cars off the road.

3.e. Involve local governments.

Local governments should play a prominent role in guiding and overseeing community consultations where feasible. They can facilitate partnerships, raise awareness, provide technical assistance, and align benefit sharing with development plans.

3.f. Consider aesthetic design of projects.

Mitigating visual impacts involves integrating renewable energy infrastructure harmoniously into the landscape through design integration, strategic placement, setback requirements, landscaping, and lighting design. This helps reduce the visual prominence of the infrastructure and make it blend with the surrounding environment, improving the aesthetic appeal and gaining community support for the renewable energy project.

Hapcheon Dam Floating Solar Power Plant: A prototype is the Hapcheon Dam in South Korea, one of the world's biggest floating solar power plants. It is an example of a large-scale floating solar power installation that benefits the environment and local communities. This is the first floating solar power plant project that residents participated and shared profits in Korea. About 1,400 residents from more than 20 villages around the dam participated as investors and are sharing the profits. The project has created employment opportunities for about 2,400 residents and provided opportunities as a new tourist attraction. The solar panels on the surface of a reservoir are in the shape of plum blossoms, which is the representative flower of the Hapcheon. Besides the economic benefits, the power plant is expected to reduce 26,000 tons of greenhouse gases and 30 tons of fine dust and produce clean energy that can supply electricity to households annually with its 41MW power generation capacity.

CHALLENGE

Community concerns about impacts renewable energy and green hydrogen projects and lack of local benefits.

RECOMMENDATION 4

Deploy carefully designed and regulated benefit-sharing mechanisms.[4]

4.a. Auctions.

Embedding social and economic value in the bidding criteria of renewable energy auctions can be an effective way for governments to ensure that project developers prioritize benefit sharing. This approach encourages project developers to consider benefit sharing as a fundamental aspect of their projects from the beginning. By addressing benefit sharing in auctions, projects are more likely to gain acceptance from local communities, facilitate responsible land acquisition, and meet community engagement expectations set by financing institutions. Governments can provide detailed guidelines for bidders through transparent tenders, evaluation and scoring criteria, and legal structures.

South Africa's Renewable Independent Power Producer Programme (REIPPP), the government awards projects with preferred bidder status based on the bidder's pledged contributions to socioeconomic development, with a weight of 30% of the score. Under South Africa's REIPPP, projects can be given half a termination point for having below 65% on any economic development obligation.

4. This recommendation is adapted from the Columbia Center on Sustainable Investment publication "Community Benefit Sharing and Renewable Energy and Green Hydrogen Projects: Policy Guidance for Governments". https://ccsi.columbia.edu/content/benefit-sharing-policy-guidance-renewables-hydrogen.

4.b. Community development agreements.

Governments may consider developing policies that mandate or encourage community benefit sharing agreements. In the right circumstances, and if designed correctly, such agreements can build a sufficient social license to operate in a way that also does right by those whoserights and livelihoods are at stake in a planned renewable energy project.

In **Chile, Endesa**, financially supported by the World Bank Group's International Finance Corporation (IFC), developed Pangue Hydro. This is the first hydroelectric power plant constructed on the Bio-Bio, which holds great significance for indigenous Pehuenche communities. The construction of the Pangue dam resulted in the flooding of approximately 450 hectares of land, forcing the displacement of 53 individuals from their ancestral homes. In compensation, the Pehuen Foundation was established in 1996 and contributed to the level of 0.30% of the local company (Pangue SA)'s net income. The Foundation faced criticism for allegedly failing to promote long-term development of the Pehuenche community, and instead creating economic dependency. Additionally, the distribution of the foundation's funds primarily favored the most influential and well-off members of the Pehuenche community, who were those actively involved in the Foundation Board and decision-making processes. As a result, only around 20% of the community benefited from the foundation's funds, leaving the most vulnerable and furthest away families without any support.

4.c. Community co-design.

Consider not only consulting but inviting communities to co-design benefit sharing programmes. This can dramatically increase the strength and durability of a project's social license. For example, The Hepburn Wind Project in Australia established a Community Fund that was designed with local community input so that it surveys community members every few years regarding what areas the Fund should focus on.

The Hepburn Wind Project in Australia established a Community Fund that was designed with local community input so that it surveys community members every few years regarding what areas the Fund should focus on.

4.d. Community shared ownership.

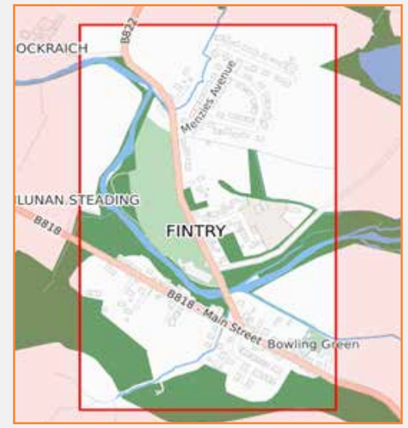
Community shared ownership of renewable energy projects has the potential to effectively redistribute benefits and gain social acceptance. It can involve individual landowners co-investing with developers for financial returns or utility bill discounts, community organizations investing in joint ventures or future revenue streams, or full community ownership of project assets. Denmark's 2008 Promotion of Renewable Energy Act requires developers to give local citizens the opportunity to own a portion of a project by allowing them to buy shares equivalent to at least 20% of the project's value.

Aboriginal Clean Energy partnership: Aboriginal groups and energy investors are collaborating on a groundbreaking $3 billion green hydrogen initiative in Western Australia. The project, known as the East Kimberley Clean Energy project, aims to build a large-scale green hydrogen plant using over a million solar panels to power electrolysers, producing 50,000 tonnes of green hydrogen annually. The partnership involves three Indigenous groups and a clean energy investor, Pollination, each holding an initial 25% stake in the company, named Aboriginal Clean Energy. This innovative approach seeks to involve traditional owners as true partners in clean energy development. Construction is targeted for late 2025, with hydrogen production beginning in 2028. The project envisions using renewable energy to create green ammonia for agricultural use and export. The ownership structure aims to offer benefits to Indigenous communities and reduce investor risk.

Samsø Renewable Energy Island project: Samsø Island in Denmark presents an innovative community ownership model for renewable energy. The island's offshore wind turbines are not solely owned by large corporations or private entities, but rather by a diverse range of stakeholders. Investor groups, the municipal government, and local cooperatives all have a stake in the ownership and operation of the wind turbines. This community-based approach ensures that the benefits of renewable energy are shared among the residents and stakeholders of Samsø Island. It fosters a sense of local engagement, empowerment, and collective responsibility towards sustainable development. By involving multiple parties in the ownership and decision-making process, Samsø Island demonstrates how community ownership can drive the transition to clean energy in a way that is inclusive and representative of the local population's interests.

Ambition for 50 % local ownership renewables in Netherlands: Netherlands has set an ambitious goal of achieving 50% local ownership in renewable energy projects. This goal reflects the country's commitment to democratising the renewable energy sector and empowering local communities to actively participate in the transition to a sustainable energy system. The focus on local ownership aims to ensure that the economic benefits and decision-making power associated with renewable energy projects are distributed more evenly and retained within the communities where the projects are located.

The case of **Fintry**, a small rural community in **Scotland** comprising just over 300 households, illustrates the complexity of community ownership arrangements. The community has been grappling with rural decline caused by limited employment prospects and high living expenses. In response to these challenges, the community organization Fintry Renewable Energy Enterprise (FREE) formed a partnership with Falck Renewables Designs, a constructor and operator of wind farms in the UK, France, and Italy. Their collaborative effort resulted in the construction of a 14-turbine development aiming to alleviate fuel poverty, which affected at least half of the community. After consultation with the community, Falck and FREE proposed building an additional turbine that would allow the community to participate in a co-ownership structure.



The community of Fintry, through the Fintry Development Trust (FDT), took ownership of the additional turbine by providing the required capital. To facilitate this arrangement, the developer offered a mortgage-like loan to FDT. The capital cost of the turbine amounted to £2,536,000, with a repayment period spanning 15 years. After thorough consultation, it was decided that instead of owning the individual turbine, FDT's capital investment would be used to acquire a share of the revenue stream, representing 1/15th of the entire development. The income generated from the turbine, minus the loan repayment, flows to the trust. At the time of the arrangement (2014), the trust received an annual income of approximately £50,000 net of the payment of loan and maintenance costs. FDT took on the responsibility of obtaining planning permission for the additional turbine, incurring project costs of approximately £15,000, which encompassed legal, financial, and contractual expenses. Funding for these costs was secured through the Lottery's 'Awards for All' programme and a grant from the Energy Savings Trust; both sources of funds intend to support community organizations and initiatives. The community in term used the fund to deploy a range of energy efficiency programs resulting in substantial energy savings and reducing the cost of living.

4.e. Community benefit funds.

Community benefit funds are mechanisms used by developers to contribute to the well-being of communities affected by their projects. Governments should consider codifying, ideally in the law, contracts or a community development agreement, key principles to be respected for the establishment of a fund. These include having a clearly defined purpose aligned with community-led long-term strategies, integrating community participation in the fund's governance and management, including representatives from vulnerable groups, agreeing on transparent administration rules and reporting mechanisms, and establishing clear guidelines for fund allocation and project eligibility criteria. Governments should consider how to ensure that communities receive adequate training and support to manage such funds transparently and responsibly.

Community Benefit Funds in Colombia and Germany.
In Colombia, a law mandates that solar and wind projects transfer a percentage of gross energy sales to the project's area of influence, with specific allocations for Indigenous or Afro-Colombian communities and municipalities. A 2019 law established “electric transfers” requirements. Solar and wind projects over 10 MW are required to transfer 1% of gross energy sales to the “project area of influence” as defined in the EIA.

Germany guarantees communities that allow wind parks to be built a share of the park's income for 20 years. Germany’s 2021 Renewable Energy Act “guarantees communities that allow wind parks to be built a share of the park’s income amounting to 0.2 Cent/kWh for 20 years.”

4.f. Access to electricity.

Benefit sharing programmes that provide electricity to communities lacking access to reliable power can significantly contribute to sustainable development. The Philippines' Renewable Energy Act of 2008 mandates using a portion of project royalties to subsidize affected communities' electricity costs.

For such programmes, governments should ensure that communities and developers understand ahead of consultation whether there are any legal or practical barriers to providing access. These can include extending the grid only to the renewable project and not to surrounding communities, limiting electricity provision to an industrial project, lacking authorization to directly supply consumers, and offering unaffordable electricity to the poorest community members. Additionally, governments should consider investing in distribution lines, power subsidies, and maintenance work to support benefit sharing initiatives.

For instance, the 2008 **Renewable Energy Act in the Philippines** states that 80% of royalties and/or government share of renewable energy projects must be used directly to subsidize the electricity costs of communities affected by these projects, provided their monthly consumption does not surpass 100 kW. This subsidy may be in the form of rebates, refunds and/or any other forms.

4.g. Employment and skills development.

Governments need to ensure that renewable energy projects provide employment and skills development opportunities. This not only enhances social acceptance of renewables by creating decent jobs but also prepares the workforce for the energy transition through education and training. Governments can consider imposing employment and skills development requirements and establish guidelines for developers, encouraging job and training opportunities at each project stage and partnering with local educational institutions for skills development. Governments could also promote policies for local labor, young and women training. It will be necessary to manage job creation expectations upfront and clearly communicate the cyclical nature of job opportunities in renewable energy projects.

Sarulla Geothermal Power Development Project, Indonesia
Government guidelines should clearly communicate the cyclical nature of job opportunities in renewable energy projects; managing job creation expectations upfront is essential to addressing potential social impacts. Job opportunities are often highest during the peak of construction and may experience a significant decline during the operation phase. The Sarulla Geothermal Power Development Project in Indonesia not only demonstrates proactive measures in managing job creation expectations but also places a strong emphasis on workforce development and safety. In addition to communicating job cycle expectations and engaging with the local community, the project has been actively involved in training initiatives.

These training efforts encompass various aspects, including the number of sessions, topics covered, and the percentage of the workforce trained. Furthermore, alongside the Capacity Building training outlined previously, the project has undertaken additional training endeavors:

- On 14th June 2014, a First Aid Training session was conducted, benefiting 11 employees.
- On 17th June 2014, a Hazardous Waste Handling Workshop, specifically intended for Health, Safety, and Environmental (HSE) staff from SOL, was organized in collaboration with the Badan Lingkungan Hidup of North Sumatera. This workshop involved the participation of two HSE staff members.

These comprehensive training efforts underscore the project's commitment to not only managing job expectations but also ensuring the safety, competence, and well-being of its workforce while contributing to the local community's overall development.

Orkney Community, Scotland: Governments should also explore the integration of job creation into existing benefit sharing mechanisms, such as an ownership model. One example is the Orkney communities in Scotland, where the world's first tidal-generated hydrogen project is located. In addition to commissioning their own turbines, they have taken the initiative to operate and maintain their installations independently, with support from Community Energy Scotland (a charity assisting communities in owning their own energy), instead of relying solely on external professional resources.

Namibia mandates that all operations and maintenance activities be carried out by local workers. Project developers must implement capacity-building programmes if they cannot find skilled Namibians, and they are also required to hire unskilled and semi-skilled labor from nearby communities. Bidders who prove their inability to find Namibians with the necessary skills are required to implement a comprehensive capacity-building program to develop local skills within three years from the commercial operation date. Namibia also requires project developers to source all unskilled and semi-skilled labor from communities within a 100 km radius of the project site.

Just Transition Energy Tender – Energy transition as engine for job creation.

The Spanish government is strategically promoting the energy transition as a means to revitalise regions impacted by the closure of coal facilities, aligning ecological and industrial goals. Key actions include legislative amendments through Royal Decree-Law 2023/2020, which dictate that available electricity grid access capacity post-coal plant closures will be allocated through "Just Transition Tenders." These tenders prioritize renewable energy projects that maximize local socio-economic and environmental benefits.

This approach breaks from tradition by evaluating projects not only on technical merits but also their alignment with the Just Transition Strategy. This includes assessing their impact on employment, especially for women and former coal workers, re-skilling initiatives, energy self-consumption promotion, and supporting associated industrial projects and local investments. This creates a competitive environment where renewable energy companies vie to enhance local socio-economic advantages, effectively using renewable expansion to address closure-affected regions' needs.

A successful example is the first Just Transition Tender in Andorra's coal power plant node (Teruel), where 1,202 MW capacity was offered. The results demonstrated that the jobs generated significantly exceeded those lost due to plant closure, illustrating the potential of this approach.

Further guidance on regulating **"Community Benefit Sharing and Renewable Energy and Green Hydrogen Projects"** is available from the Columbia Center on Sustainable Investment.

CHALLENGE

Potential environmental effects of the proposed project on ecosystems, wildlife, and natural resources.

RECOMMENDATION 5

Put in place strong policies and safeguards to limit environmental impacts.

Rigorous and inclusive assessments of environmental impacts in the planning and permitting stages are key to identify potential impacts and enable the implementation of necessary mitigation measures for project planning. It is also critical to build trust with citizens that are concerned about negative effects on their environments and communities.

5.a. "Do No Significant Harm".

The "Do No Significant Harm" (DNSH) principle is a guiding concept that prioritises responsible and sustainable development in various sectors, including renewable energy and green hydrogen projects. DNSH places a strong emphasis on minimising adverse environmental and social impacts while promoting efficiency and ethical decision-making.

The "Do No Significant Harm" (DNSH) principle advocates responsible and sustainable development, notably in renewable energy and green hydrogen projects. It prioritises minimising environmental and social impacts while fostering efficiency and ethical decision-making. In the EU Taxonomy, DNSH is a fundamental criterion.

DNSH expedites permitting by encouraging early issue identification, stakeholder engagement, robust mitigation strategies, transparent decision-making, compliance assurance, and innovation. It also ensures ongoing monitoring and adaptation. By aligning with DNSH principles, projects can gain support, reduce opposition, demonstrate compliance, and accelerate the transition to cleaner energy, aligning with the EU Taxonomy's sustainable finance framework.

5.b. Biodiversity conscious and nature positive development.

Creating harmonious connections between biodiversity conservation efforts and the development of renewable energy projects through strategic planning and collaboration is essential. Some efforts include incorporating biodiversity considerations into the construction process of projects, ensuring the protection and enhancement of natural ecosystems and species. Integrating advanced technology-based monitoring systems for biodiversity with on-site visits by experts enhances comprehensive and accurate ecological assessments.

For example, to minimise impacts on habitats, seabed, and coastal ecosystems during construction activities such as installing cables, thorough surveys are conducted to ensure strong consideration of natural habitats before and after the installation process. These surveys involve assessing the existing ecological conditions and identifying any sensitive areas or species that may be affected. For example, if there is a known seagrass bed or coral reef in the construction area, the surveys will determine the precise boundaries of these habitats to inform the construction plans and avoid or minimize disturbance.

Once the surveys have identified potential impacts, steps are taken to limit any potentially disturbing activities. This includes carefully planning the duration, intensity, and extent of construction activities. For instance, if an area is known to be frequented by protected animals at night, construction activities may be restricted to daylight hours to minimize disturbance to their natural behavior and habitats.

Unavoidable impacts that may occur despite mitigation efforts are managed, monitored, and mitigated to levels acceptable by local authorities and regulatory bodies. This could involve implementing measures such as sediment and erosion control to prevent excess sedimentation in nearby ecosystems or using specially designed construction techniques to minimize physical disturbance to the seabed.

Other examples include:

- **Floating Solar** that reduces the use of sensitive habitats, while limiting algae blooms and evaporation, as well as cooling the PVs.
- **Solar Shading** keeps moisture in the ground longer, thereby helping revegetate desertified land.
- **Stopping extraction of peat** and using rewetted areas for wind farms can significantly reduce methane emissions and improve biodiversity.
- **Bird and Habitat Protection** and reducing bird collisions by installing neutral-colored deflectors at regular intervals along cables.
- Preventing illegal fishing safeguards marine life.
- Cutting fertilisers boosts biodiversity.
- Post-construction sites aid biodiversity.

A new model proposed by the **Danish government**, in collaboration with industry stakeholders, has established a dedicated recycling infrastructure to handle end-of-life renewable energy components. By partnering with specialized recycling companies, Denmark ensures the proper disposal, dismantling, and recycling of wind blades and solar panels, thereby minimizing environmental impact and promoting a circular economy in the renewable energy sector.

International Hydropower Association: Hydropower in Protected Areas and World Heritage Sites. Protected Areas, including World Heritage Sites recognized by UNESCO, play a crucial role in conserving nature. The International Hydropower Association (IHA) acknowledges their significance in biodiversity preservation. Sustainable hydropower can provide clean energy and benefit communities when developed responsibly. In September 2021, the IHA made a Board-level decision, imposing restrictions on its members regarding hydropower development in Protected Areas and World Heritage Sites. These commitments include refraining from new projects in World Heritage Sites, maintaining high standards in areas affecting protected regions, and collaborating with stakeholders to enhance existing and establish new protected areas.

Iberdrola's CONVIVE Programme:
The Convive Programme was created with the objective of integrating all existing initiatives, collaborations and alliances that contribute to the development of renewable energy projects in harmony with biodiversity while improving land and local communities. It has three areas of work: **1)** protection and enhancement of biodiversity; **2)** contribution to socio-economic development (mainly at the local level); **3)** lessons learned from experience and experts (including through third parties' partnerships).

Permitting authorities commonly require compensatory actions for the potential environmental loss due to renewable energy (RE) projects. Managing these on a case-by-case basis consumes time and resources for both authorities and developers. Alternatively, national governments could establish a comprehensive scheme addressing compensatory rehabilitation/restoration for vegetation/biodiversity loss caused by RE/transmission projects. Developers might execute these projects on alternative lands, or governments could define costs based on ecological categories, deposited by developers and managed by a designated agency. This approach, akin to India's forest land use model, streamlines procedures, fostering ecological-economic balance and efficient project execution.

5.c. Recognise ecological diversity in auctions.

To ensure that developers prioritise positive biodiversity and social impacts in their deployment plans, auction tender processes for site lease awards and offtake agreements must consider these factors through either qualification criteria or weighted selection criteria.

The **EU State Aid Guidelines for offshore wind** released in January 2022 allows member states to allocate up to 30% of the decision-making weight to non-price criteria, including social and biodiversity effects.

5.d. Integrated renewable energy and agricultural planning.

Governments should prioritize renewable energy projects that not only avoid harming the environment and biodiversity but also provide benefits to farmers and communities. Wind energy coexists seamlessly with agricultural activities, providing clean power generation while utilizing the land effectively. Solar projects can be strategically located to restore ecosystems and improve agricultural land. Governments should equip themselves with an understanding of where, in their territories, solar plants can facilitate the restoration of ecosystems while improving the fertility of agricultural land eroded by monoculture.

The Solar Park Impacts on Ecosystem Services (SPIES) tool is developed through collaboration between academic institutions, the solar industry, farmers, and conservation bodies, helps inform decision-making regarding solar parks based on scientific evidence.

5.e. Company level environment and nature positive strategies.

Implementing comprehensive strategies at the company level to actively contribute to biodiversity conservation and restoration, including measures such as habitat protection, ecological restoration projects, sustainable sourcing practices, and engagement with local communities and stakeholders.

Developers can derive various advantages by setting targets to achieve net-biodiversity-positive outcomes, benefiting the ecosystems where their projects are located. Renewable energy companies like Orsted and Iberdrola have committed to becoming net-biodiversity-positive by 2030. This commitment encompasses best-practice site selection and construction at a project level, as well as broader biodiversity-positive actions such as reintroducing native species and rewilding affected areas at a developer level. By actively influencing biodiversity, developers may face fewer legal challenges related to environmental concerns compared to those who neglect mitigation efforts.

In **Brazil, Iberdrola** is creating a biodiversity corridor connecting forest and permanent conservation areas as part of their net positive impact on biodiversity by 2030 goal.

One example of a wind project that goes beyond maintenance to generate "nature-positive" outcomes is the **Borssele Wind Farm** in the North Sea, off the coast of **the Netherlands**. This wind farm consists of several offshore wind turbines and has incorporated features that contribute to environmental enhancement.

One of the notable nature-positive outcomes of the Borssele Wind Farm is the creation of artificial reef habitats. The wind turbine foundations were designed with features to mimic natural reefs and provide shelter for various marine species. These artificial reefs attract marine life and can help to increase local biodiversity by creating new habitats in areas that were previously dominated by open sea.

Additionally, the Borssele Wind Farm project has contributed to the restoration of flat oyster beds in the North Sea. Flat oyster populations in the North Sea had been severely depleted due to overfishing and habitat loss. The construction of the wind farm involved placing shells and other materials on the seabed, which has helped to restore oyster beds and create a healthier environment for these shellfish to thrive. Oyster beds are crucial for supporting marine ecosystems, as they filter water and provide habitat for various marine species.

Projects like the Borssele Wind Farm demonstrate the potential for renewable energy initiatives to have positive impacts beyond their primary purpose of generating clean electricity. By incorporating environmentally friendly features and restoration efforts, these projects can contribute to the overall health and resilience of marine ecosystems.

5.f. Create and maintain comprehensive environmental data banks.

Creating and maintaining better government environmental data banks is crucial for informed decision-making. These comprehensive repositories would collect and organise diverse data on pollution, climate change, and natural resources. Regular updates, stringent quality control, and user-friendly interfaces would enhance accessibility, enabling effective environmental policies and fostering sustainable practices.

Governments could accelerate the development of these banks across various technologies by making them accessible to developers. This initiative holds immense potential for expediting progress, enabling innovation, and leveraging the expertise of developers to enhance the functionality and utility of the environmental data banks. New artificial intelligence technologies can be used by governments to conduct environmental impact assessments and mappings, e.g. eDNA technology used by Nature Metrics.

Creating a map that overlays biodiversity indicators with renewable energy generation potential could vividly showcase intersections between high generation potential and low biodiversity regions. This mapping could streamline permitting acceleration zones and clarify unsuitable areas for renewables. This would eliminate the need for individual developers to perform Environmental Impact Assessments (EIAs) in high biodiversity regions inappropriate for development.

While EIAs remain vital for environmental and social safeguards, countries could enhance efficiency by crafting their own environmental maps to furnish developers with substantial data, curbing the necessity for extensive surveys.

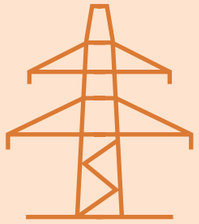
Spain, where digital mapping of wildlife in Natura 2000 zones provides an overview of detail required in environmental assessments. The digital mapping of wildlife in these areas lies primarily with the Ministry for the Ecological Transition and the Demographic Challenge (Ministerio para la Transición Ecológica y el Reto Demográfico). Within this ministry, the body responsible for the implementation and management of the Natura 2000 network is the General Directorate for Biodiversity and Natural Environment (Dirección General de Biodiversidad y Calidad Ambiental).

CHALLENGE

Slow and delayed clean energy penetration into the electric power grids.

RECOMMENDATION 6

Accelerate grid infrastructure build-out and integration.



Effective grid integration policies are crucial for renewable energy permitting to achieve higher penetration levels and enhance overall project system flexibility. Slow grid access permitting is delaying the connection of new renewable energy capacity to the grid.flexibility. Slow grid access permitting is delaying the connection of new renewable energy capacity to the grid and also hindering the integration of essential long-duration storage solutions like pumped hydropower.

6.a. Higher grid flexibility.

To accommodate increasing levels of variable renewable energy, most power grids will require major changes and upgrades to their physical infrastructure, planning and operations, and electricity market structures. Therefore, grid management operations must be updated, and their flexibility increased.

Consider setting out legislation to provide guaranteed grid connection for distributed solar PV systems. Governments could guarantee grid connection for plants under a certain capacity, once created, as well as the purchase of excess power at a fixed price, create a more predictable income stream and certainty of connection when starting the project.

Cross-border grids play a pivotal role in energy equilibrium and are critical for a widespread transition to renewable energy. National legislations should simplify the integration of these international links with domestic grids, incorporating measures to ensure standard uniformity when necessary.

Chile's PMGD (Pequeños Medios de Generación Distribuida) programme, which promotes the development of small-scale distributed generation projects. Chile has seen great growth in small and medium distributed generation assets of up to 9MW. PMGDs can take advantage of several incentives, including easier protocols to connect to the grid and a separate price-setting mechanism known as the stabilized price regime.

6.b. Planning new grid and transmission infrastructure.

To effectively plan and build new transmission and distribution infrastructure, governments must consider clean energy and distributed resources as important factors. The key here is that it happens in tandem with renewable energy buildout schedules and targets, so different authorities are in alignment about future integration needs and the volumes that will need to be connected.

Effective planning at the national level that aligns with regional and provincial governments can help overcome bureaucratic obstacles that impede infrastructure development.

The **Green Energy Corridors initiative in India** is an innovative system to strengthen transmission infrastructure to facilitate the integration of renewable energy into the grid. It involves the construction of new transmission lines, substations, and grid infrastructure in regions rich in renewable energy potential. These corridors enable the efficient evacuation and transmission of renewable power from resource-rich areas to demand centres. By addressing the intermittency of renewable sources and improving grid stability, the initiative supports the seamless integration of solar and wind energy into India's electricity system. The Green Energy Corridors initiative plays a crucial role in India's efforts to expand its renewable energy capacity and transition towards a more sustainable energy future. Further, plans like the national Transmission Systems Plan for Integrating 536 GW of RE by 2030 developed by the Central Electricity Authority, which is the highest authority in this respect in India has significantly removed uncertainties and made certain transmission projects easily bankable due to relaxed requirement of due-diligence by banks.

6.c. Transmission line planning avoiding protected areas.

Avoiding transmission lines in protected areas helps expedite the permitting process for renewable plants by mitigating environmental concerns and potential conflicts. By steering clear of these ecologically sensitive areas, developers can avoid opposition from environmental groups and streamline the regulatory approval process. This leads to faster permit issuance, allowing renewable projects to move forward more efficiently and contribute to the transition to clean energy.

India's national guidelines such as "**Eco-friendly measures to mitigate impact of linear infrastructure projects on wildlife"** mandated by the national government to be followed by project developers and permitting authorities have helped transmission system developers in a significant manner.

"[Agreeing] a set of recommendations for strengthening planning and approval processes for renewable energy projects is an important instrument that I am sure will bear fruit and will become an impetus to accelerate the much-needed energy transition."

Teresa Ribera
Minister for the Ecological Transition and the Demographic Challenge of Spain

The **MinisTerra Transmission Line project in Spain** exemplified meticulous planning to avoid protected areas while integrating renewable energy sources. Thorough environmental assessments and stakeholder consultations were conducted to select a route that minimized impact on national parks, nature reserves, and Natura 2000 sites. By employing advanced mapping techniques and expert input, the project ensured a balance between renewable energy development and the preservation of sensitive ecosystems, contributing to Spain's sustainable energy goals.

In Spain, renewable projects can benefit from a fast-permitting procedure if both the project and the high voltage line are completely out of any environmentally sensible area set by the government. Overhead high voltage lines must also be less than 15km (lengthy lines are not environmentally suitable).

6.d. Development of joint grid feed-in points for combined renewable energy projects.

By combining the energy generation from wind and solar sources (and floating solar installations) at a single grid connection point, the infrastructure requirements can be minimised, reducing the complexity and time needed for permit approvals. This integrated approach streamlines the environmental impact assessment process, as it allows for a consolidated analysis of potential ecological effects. Furthermore, it enhances the efficiency of grid integration, maximising the utilisation of available transmission capacity. The simplified permitting process enables faster deployment of renewable and green hydrogen projects, facilitating the transition to a more sustainable energy system.

6.e. Priority for grid connection to repowering projects and those that are installed in acceleration zones for renewables.

Repowering projects often involve replacing older infrastructure with more efficient and higher-capacity technology, maximising energy generation at existing sites. Similarly, REZs are designated areas with favorable renewable energy resources and streamlined permitting processes. By prioritizing grid connection for these projects, regulatory barriers are reduced, permitting timelines are shortened, and grid integration becomes more efficient.

California's 2030 Resource Adequacy (RA) Enhancements allowed repowering projects with at least a 25% capacity increase to access priority RA procurement, while REZs streamline permitting for large-scale renewable projects through simplified environmental review and grid interconnection processes.

Vineyard Wind project in the United States: This is an example of a project where priority was given to a renewable energy plant with related grid infrastructure during the permitting process. Vineyard Wind is an offshore wind energy project off the coast of Massachusetts.

To facilitate the development of Vineyard Wind, the project was granted priority status by the U.S. Bureau of Ocean Energy Management (BOEM). This priority status allowed for accelerated environmental reviews and a streamlined permitting process. Additionally, the project received support from the state government, with Massachusetts prioritising the development of offshore wind and providing incentives for grid connection and infrastructure development.

6.f. Planning hydrogen transportation infrastructure and pipelines.

Hydrogen transportation infrastructure and pipelines will be critical to scale up of the green hydrogen market. This will require planning and approvals for new and expanded infrastructure. Leveraging existing pipeline infrastructure or analogous regulatory frameworks, hydrogen infrastructure and pipeline projects could profit from established procedures and efforts to streamline permitting. This approach might expedite the approval process, drawing from past expertise while adapting safety protocols. Nevertheless, local factors, environmental assessments, and community engagement remain pivotal to ensure responsible implementation. Striking a balance between accelerated procedures and comprehensive oversight will be crucial in harnessing the efficacy of hydrogen pipelines to propel the advancement of sustainable energy solutions.

CHALLENGE

Lack of land availability and poor allocation.

RECOMMENDATION 7

Allocate land appropriately and strategically.

The availability and appropriate allocation of land have a significant impact on the feasibility and success of renewable energy and green hydrogen projects.

7.a. Establish Renewable Energy Zones (REZs).

One way to deliver better planning is to introduce "renewable energy zones (REZs)", area that are preselected for renewable energy projects based on factors such as high-quality renewable energy resources, suitable topography and land-use designations, proximity to existing or planned transmission infrastructure, and highway corridors. Such zones should avoid sensitive natural areas, simplify project approval processes, and adopt location-specific standards for renewable energy developments.

Frequently, projects encounter delays due to permitting authorities seeking a grasp of the combined environmental and biodiversity impacts within a specific area. This concern arises more often for renewable energy projects, given varying suitability of locations. While the Renewable Energy Zone (REZ) concept offers a practical solution, it necessitates preliminary Carrying Capacity assessments. It is imperative for national governments to promptly conduct such studies for REZs. This ensures potential developers are informed about project size limitations within these zones. Consequently, this proactive measure prevents resource wastage and competition among developers aiming to surpass the Carrying Capacity-defined limits.

The Africa Clean Energy Corridor initiative employed the MapRE technology to locate Renewable Energy Zones (REZs) within the Eastern and Southern African Power Pools. The initiative ranked areas based on specific variables such as socioeconomic, environmental, and cost efficiency, which helped identify regions that could potentially promote low-cost energy access and have low environmental impact. This allowed strategic planning across the 21 countries included in the ACEC, including identifying interconnection areas between countries.

The **Australian National University Atlas** of off-river Pumped Storage sites identifies suitable locations for hydropower development. It provides detailed information on potential sites, including topography, water availability, and environmental considerations. This resource assists governments in making informed decisions regarding the development of off-river pumped storage projects.

7.b. Strategic Spatial Planning and “renewable acceleration areas".

Governments should strategically increase planning efforts to help shorten down project permitting stages, by for designating 'renewables acceleration areas’ in areas with high potential for deployment of renewable energy and limited negative environmental impact. This includes considering the historical incidence of development disputes in these areas. The socio-spatial considerations that go into defining such areas should be mutually agreed with regional governments and surrounding communities. By doing so, they can lay the groundwork for a successful project while also ensuring that it aligns with the needs and concerns of the local community.

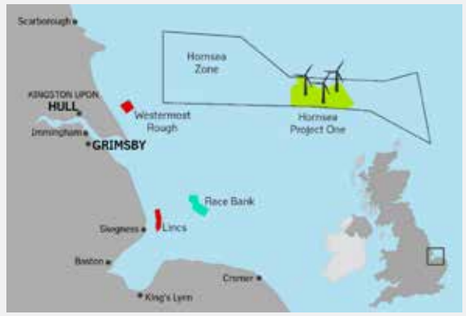
In line with the **REPowerEU** rules on renewable energy, EU Member States are required to map suitable land and sea areas for renewable energy project. This means designating ‘renewables acceleration’ areas and avoiding environmentally valuable areas. The Commission has made available relevant datasets in the Energy and Industry Geography Lab online platform to support Member States in identifying these acceleration areas. This will help in the rapid deployment of new installations for the production of energy from wind and solar renewable sources.

7.c. Digital mapping tools to aid deployment.

Digital mapping tools, utilising GIS technology, assist in deploying and permitting renewable energy and green hydrogen projects. They offer resource mapping for identifying high-potential areas and aid site selection based on land availability, infrastructure proximity, and environmental considerations. These tools streamline decision-making and contribute to efficient project development.

One suggestion is to release these tools to the public on a national scale through governmental agencies. These tools should encompass, at a minimum, the following data: cadastral plot information, land classification, environmental limitations (including protected species and areas), archaeological, cultural, and landscape constraints, as well as technical constraints like proximity to infrastructure and land characteristics such as gradients and wind/solar potential. Authorities making these tools accessible to the public at the national level, by incorporating specific site-related information, could be highly beneficial.

The Hornsea Project One offshore wind farm in the **UK** utilised GIS-based digital mapping tools to select suitable locations for wind turbines. Factors such as wind resource potential, seabed conditions, and infrastructure proximity were considered. The tools aided in minimizing environmental impacts and optimizing cable routes. By streamlining decision-making, the project successfully deployed 174 wind turbines with a capacity of 1.2 gigawatts.



7.d. Early dialogue and consultations.

Early consultations can help identify legitimate land rights, especially if they are undocumented or based on community customs. It is critical for project developers to obtain free, prior, and informed consent from stakeholders with legitimate land rights, and foster an ongoing relationship with community stakeholders throughout the project's lifespan is critical.

Building indigenous community partnerships in Canada: The Eastmain-1-A/Sarcelle/Rupert development (ESMR) by Hydro-Québec in Canada's province of Québec showcases a successful collaboration with Indigenous communities, specifically the Cree. Located in the vast Indigenous territory of Eeyou Istchee, governed by the James Bay and Northern Québec Agreement, the project prioritised Cree participation from the outset. To ensure project acceptability, a partnership was established to involve Cree stakeholders at every phase. Efforts included consultations, capacity-building, and information dissemination in the Cree language. In 2002, the Cree communities gave their consent to the project by referendum, leading to the Boumhounan Agreement and subsequent agreements, reshaping the partnership and benefiting both parties economically and socially. This approach paved the way for the ESMR project's successful development, authorised by provincial and federal governments by 2007, with the last unit commissioned in 2013. Key events during this period included the Paix des Braves and the Agreement Concerning a New Relationship between Hydro-Québec/SEBJ and the Crees of Eeyou Istchee.

7.e. Data availability.

There should be a clear overview of the level of restrictions at a given site. Project developers should be able to access an online database, preferably as GIS maps, that shows what restrictions apply on a particular piece of land. These should be customisable and contain information on restrictions such as nature conservation, aviation or military interests, settlements, archaeological sites, etc. They should also contain information on grid availability for that area, data of solar/wind/hydro potential, and information on existing projects as a minimum.

7.f. Green Hydrogen Valleys.

The term "hydrogen valley" typically refers to a geographic area where various stakeholders collaborate to develop and deploy hydrogen-related technologies, including green hydrogen projects. The goal of a hydrogen valley is to accelerate the adoption and growth of hydrogen technologies in a specific region.

A "hydrogen valley" initiative, aimed at promoting hydrogen-related technologies like green hydrogen projects, has the potential to expedite permitting processes by fostering a collaborative and supportive environment. While it might not directly guarantee faster permitting, the essence of such an endeavor lies in the cooperation between governmental bodies, industries, and research institutions, which could lead to more streamlined regulatory procedures.

The essence of a hydrogen valley lies in its ability to bring together diverse stakeholders with a shared goal of advancing hydrogen technology adoption. This collaboration could result in the development of policies, incentives, and infrastructure that facilitate the permitting process for green hydrogen projects. By creating a platform for open dialogue and cooperation, hydrogen valleys might contribute to a more efficient approval process, benefiting from the collective expertise and resources of various players involved.

However, the extent to which permitting processes are expedited will hinge on the existing regulatory landscape, safety protocols, and community engagement practices in the specific region. While hydrogen valleys offer promising potential, they will need to navigate the intricacies of local regulations and address environmental and safety concerns to ensure that permitting acceleration aligns with responsible and sustainable development.

CEPSA is launching the Andalusian Green Hydrogen Valley as a significant part of its Positive Motion strategy. This ambitious renewable hydrogen project, a major initiative in Spain and Europe, aims to expedite ecological transition and enhance energy independence. With a substantial investment of 3 billion euros, two green hydrogen generation plants will be established, producing up to 300,000 tons of green hydrogen annually. This will drive the production of second-generation biofuels for aviation and heavy transportation. The project will also yield green ammonia and methanol, aiding maritime sector decarbonization.

Notably, a green ammonia plant is planned for Cepsa's San Roque Energy Park, set to be the largest in Europe, preventing 3 million tons of CO2 emissions yearly. The valley will elevate Andalusia and Spain's energy prominence, bolstering Europe's energy security and climate goals. The initiative positions Andalusian ports as leaders in green hydrogen corridors and green fuel supply, exemplified by partnerships with the Port of Rotterdam and multinationals like Yara and Gasunie.

CHALLENGE

Limited capacity and knowledge about evolving renewables and green hydrogen policies and technologies.

RECOMMENDATION 8

Strengthen and optimise institutional capacity at central and local levels.

Capacity building is important to enhance institutional knowledge, expertise, and capabilities, to ensure that permitting procedures and timelines and implemented and streamlined in practice.

8.a. Sufficient resourcing and competence enhancement.

A pragmatic measure with significant potential to address permitting bottlenecks is to enhance institutional capacity and resourcing, in particular with regional and state authorities with permitting responsibilities. Too often, the national permitting policies and targets are delayed due to lacking resources and capacity at sub-national levels. The technical expertise and skills of permit-issuing authorities in the renewables and hydrogen field needs regular enhancement, and they need to be provided with user-friendly administrative tools to facilitate the permitting process. In addition, communication channels on both national and state levels should be streamlined, and workshops or seminars should be conducted to involve all relevant authorities (national, regional, and local) to promote coordination and knowledge spill overs. Establishing proactive training programmes can further accelerate the permitting process by equipping current or future employees with the necessary skills.

8.b. Sufficient staffing for permitting roles.

It is imperative that governments guarantee that their permit-issuing agencies and environmental assessment authorities are sufficiently staffed with personnel possessing the requisite skills and qualifications. To facilitate efficient and transparent authorization processes, continuous technical and legal education must be provided to permitting authorities and companies.

8.c. Distinct roles in the permitting process.

Clear roles should be established to avoid overlapping areas of competency and provide clarity to applicants. This should include all information about the process being made publicly available, including a sequential description, the individual responsibilities of all stakeholders involved, an overview of the documentation needed to complete each step, clear deadlines for each step of the process, clear descriptions of the concerns of other interested parties and a clear dispute resolution mechanism.

In **Spain**, project developers hire an environmental consultant to assess impacts, and the permitting agency reviews permits. Land use planners, community engagement specialists, legal counsel, and regulatory agencies are involved. Construction and operations teams collaborate to build and operate the renewable energy project.

8.d. Regular assessment of resources and framework.

Regularly review and update the resources and regulatory framework to align with the changing landscape of renewable energy technologies. This ensures that the permitting process keeps pace with the evolving industry standards and best practices.

Germany has recognised the need to continuously review and update its regulations to accommodate the evolving renewable energy landscape and streamline the permitting process. In recent years, Germany has undertaken several initiatives to expedite the permitting of renewables, including the Renewable Energy Act (EEG). Germany's Renewable Energy Act, updated periodically, provides a stable and predictable framework for renewable energy development. It sets specific targets for renewable energy deployment, defines support mechanisms, and streamlines the administrative procedures for project permitting.

8.e. Regular Monitoring.

A robust monitoring framework must be established, with digital, real-time participatory monitoring platforms serving as effective solutions.

An example of such a platform is the GIS-based **e-Green Watch** portal, designed to oversee the status of compensatory restoration within India's forest and wildlife permitting system.

8.f. Evaluating opportunities for interagency coordination to facilitate knowledge sharing.

International organisations, multilateral agencies, and the United Nations establish platforms to share best practice examples in this regard. These platforms can serve as a hub for countries and stakeholders to exchange experiences, strategies, and successful approaches for simplifying and expediting permitting procedures. By showcasing real-world examples of effective streamlining, these platforms foster collaboration and enable countries to learn from one another, promoting the adoption of efficient permitting practices globally. Digital platforms can be made available to share the best available science and fact-based information.

WINDExchange, a U.S. Department of Energy initiative that promotes wind energy development offers an online platform with resources and tools for individuals and organisations interested in wind energy. The platform provides access to educational materials, research publications, interactive maps, and databases. WINDExchange facilitates networking and collaboration among industry professionals and policymakers, and keeps stakeholders informed about policy developments. Its goal is to accelerate the growth of wind energy as a clean and renewable source in the United States.

8.g. Creation of administrative units dedicated to permit acceleration.

Acceleration units have revealed as necessary to optimise processes that should take into account:

- A clear sequential description of the application process.
- Individual responsibilities of authorities (and other parties involved) should be clearly assigned, such as the one-stop shop as a central responsible authority, and reducing the number of parties involved to improve efficiency of the process.
- Transparency on required documentation at each step avoiding repetitive requests for further docs and data.
- Clear deadlines for each step of the process should be defined, together with tacit approval wherever it can be applied.

The **Project Acceleration Unit (UAP)** created by the **Andalusian Regional Government in Spain** for the streamlining of strategic projects. It depends organically and functionally on the Directorate General for Peripheral Administration and Administrative Simplification and is made up of a multidisciplinary team of civil servants from the senior bodies of the Regional Government (Project Managers) trained to work in accordance with the principles that should govern good administration. Thus, the Project Accelerator Unit will promote and coordinate the investment projects assigned to it, promoting the streamlining of all the procedures of the Andalusian Public Administrations that are necessary to carry them out and will carry out the appropriate actions to ensure the preferential and urgent processing of the projects in the different administrative procedures. Once the project has been assigned to the Unit, it will provide assistance and advice to the promoting persons or entities on all the procedures necessary for the effective start-up.

CHALLENGE

Technological risks hinder permitting where technologies are new and industry standards are under development.

RECOMMENDATION 9

Avert technological risks by adopting rigorous standards.

Renewable energy sources vary in terms of technology and risks associated with them. Avoiding uncertainty associated with the performance, reliability, and compatibility of these renewable energy technologies is an important requisite for a speedy and safe renewable energy build out.

9.a. Regulatory certainty through pre-feasibility studies.

To mitigate technological risks and ensure regulatory certainty, it is crucial to undertake pre-feasibility studies. Clearly defining objectives, conducting comprehensive research on relevant regulations and standards, and engaging experts from various fields are vital steps. These studies enable a proactive approach in identifying potential challenges and ensuring compliance with regulatory requirements. By involving stakeholders and seeking their input throughout the process, the study can address concerns and gather valuable insights.

Through this proactive approach, the studies help reduce pre-bid investment risks, financing, and societal costs. Ultimately, pre-feasibility studies provide a solid foundation for decision-making, risk management, and the development of effective strategies to navigate the complex landscape of emerging technologies.

In **Denmark's Wind Energy Development Project**, the developers including Ørsted, Vattenfall, and Vestas, among others utilised pre-feasibility studies to enhance renewable project permitting. These studies evaluated suitable sites, addressed challenges, and ensured compliance with regulations, facilitating the deployment of wind energy projects.

9.b. Development and monitoring of safety standards.

Safety around hydrogen leakage, processing, storage, transportation etc. Projects and technologies linked to hydrogen can be particularly complex because of the combination of two new renewable technologies (hydrogen + Power-to-X), in turn making it harder to apply existing regulations and planning approvals.

The **United States** has been actively involved in the development and implementation of hydrogen safety standards. The US Department of Energy (DOE) has been working on safety guidelines and codes through organizations such as the Hydrogen Safety Panel and the National Fire Protection Association (NFPA).

9.c. Adoption of renewable energy and hydrogen standards and certification.

Establishing clear definitions, standards and certification frameworks for renewable energy and green hydrogen production and usage will reduce the risk and uncertainty among permitting administrators and accelerate the process. Standards like the Hydropower Sustainability Standard[5] and the Green Hydrogen Standard[6] are examples of global efforts to harmonise such standards.

National governments should establish CO2 emission standards for manufacturing projects that utilise renewable energy, such as Green Hydrogen or Green Steel, to enable prioritised approvals. For instance, countries like India and the US advocate around 2 kg CO2eq/kg of Green H2, while the EU standard stands at 3.384 kg CO2eq/kg. In this context, a national government's provision of streamlined permits, in alignment with the finest global benchmarks, can expedite the replication of low-emission projects, thereby fostering growth in renewable energy domestically. In essence, infrastructure like transmission lines for manufacturing ventures that exceed the prescribed RE standard over a 24-hour cycle should receive swift clearance.

9.d. Averting water permitting risks.

Avoiding water permitting risks is essential for green hydrogen projects, considering the environmental and permitting challenges related to water supply and desalination. Thoroughly evaluating the availability of ground and surface water, as well as considering seasonal variations in water supply, is vital during the initial stages of project design and engineering.

It's crucial to highlight the increased water risk associated with hydrogen projects. Therefore, it is imperative that, prior to granting authorisation for any new project, a comprehensive assessment of the projected water consumption over the project's lifespan is conducted and clearly outlined. For projects where water plays a vital role, there might be an even greater necessity for cross-ministerial cooperation. This is particularly important given the potential scenario where the ministries responsible for ecological transition and infrastructure might not have jurisdiction over water or biodiversity matters.

Likewise, this coordination should extend to the organisations responsible for supplying water to citizens and businesses. These entities might adhere to distinct regulatory frameworks and permitting processes compared to those overseeing electricity delivery or other power-related services.

5. International Hydropower Association, Hydropower Sustainability Standard. https://www.hydropower.org/sustainability-standard
6. Green Hydrogen Standard, GH2 Standard, https://greenhydrogenstandard.org/

Conclusion and next steps: broadening the government, industry and civil society coalition

This nine-point plan for fast and fair permitting is just the start. We now need to put these recommendations to action together.

A serious global, national and local level effort is needed by policy makers and industry leaders to raise awareness in society about the need to accelerate the energy transition and deployment of renewables, and the role of effective permitting and community engagement to make it happen.

We encourage governments to drive these recommendations forward in partnership with industry and civil society, and join our global alliance for fast and fair permitting.

The Planning for Climate Coalition secretariat will continue compiling and sharing case studies showing how we get to fast, effective and trust-building permitting for large-scale renewable energy and green hydrogen projects.

We also intend to broaden this effort to a wider coalition that will regulatory assess progress in speeding up permitting in an inclusive way, and invite all stakeholders to join the effort to tackle climate change with fast and fair permitting.

Key Complementary Resources

Community Benefit Sharing and Renewable Energy Projects
Columbia Center on Sustainable Investment

Streamlining planning and permitting to accelerate wind and solar deployment
Energy Transitions Commission

Enabling Frameworks for Offshore Wind Scaleup: innovation in permitting
IRENA and GWEC

Green Hydrogen Contracting Guidance: Community Consultation and Transparency
Green Hydrogen Organisation

More information on Planning for Climate: **gh2.org/planning-climate**

Leading industry players have united to form a unified renewable energy voice: The Global Renewables Alliance. One voice calling for increased ambition and accelerated uptake of renewable energy. The global stocktake of the Paris Agreement presents a pivotal point in the COP process, and vital moment for the renewables sector to speak with one voice. COP28 represents the last major chance to get the world back on track and hold nations account for delivering on their environmental targets. Fast and fair permitting is a key part of the solution.

The Green Hydrogen Organisation (GH2) is a non profit foundation focused on dramatically accelerating the production and use of sustainable green hydrogen across a range of priority sectors globally. GH2 initiatives include the Green Hydrogen Standard; the Green Hydrogen Charter and country portal; the DFI Green Hydrogen Roundtable; Green Hydrogen Contracting - for People and Planet; the Planning for Climate Coalition and the Campaign for 100 million tonnes of Green Hydrogen by 2030.

The Green Hydrogen Organisation is one of six founding members of the Global Renewables Alliance.

GH2 Green Hydrogen Organisation | Global Renewables Alliance

gh2.org | globalrenewablesalliance.org