Impact Report 2023

A glimpse of how Ember turned data into action in 2023

A growing team with growing impact

Ember has achieved another phenomenal year of policy impact, from India to the EU, while the organisation grew significantly. We're now more than 50 data and climate experts around the world.

In 2023, climate impacts were being felt by everyone on the planet, but amidst terrible calamities, there's optimism to be found in the acceleration of clean power, particularly solar and wind. Country after country is achieving exponential growth in these technologies, and this plentiful clean electricity is set to dominate in sectors from heat to transport.

I'm immensely proud of the team's work to make Ember a significant international champion for a clean, electrified energy system. Our rigorous data is becoming the go-to source for more and more businesses, institutions and media. And our analysis is demonstrating that the world is about to achieve the first structural fall in power sector emissions.

We're also beginning to make significant headway in raising the profile of coal mine methane – a major neglected climate change accelerant. It's equivalent to all emissions from shipping and aviation combined, and so must be tackled this decade.

As every sector electrifies, humanity can peak total emissions and force them into a rapid decline this decade – and Ember will be driving that acceleration every step of the way.

Phil MacDonald
Managing Director
Ember

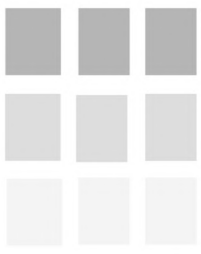
We create targeted data insights to advance policies that urgently shift the world to a clean, electrified energy future

Ember's new mission

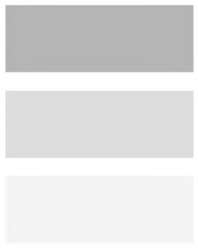
A safe climate powered by clean electricity

Ember's new vision

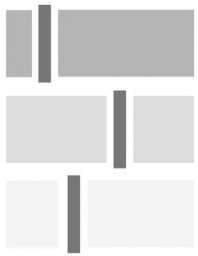
We turn data into action



Gather

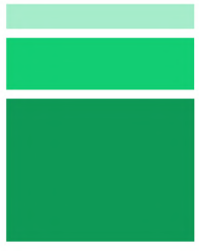


Curate

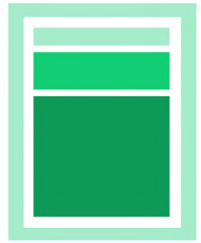


Analyse

We gather, curate and analyse data on the power sector and coal mine methane emissions, and make it open for all to use.



Change
policy



Shift
narratives

Empower
campaigns

Our data-driven insights shift the conversation towards high impact policies, and empower other advocates to do the same to ultimately change energy policies.

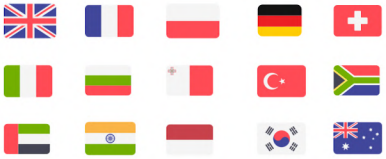
Ember is a global team with local presence

52 team members

56% female and non-binary

diversity in the whole team

15 countries



Ember staff locations

Meet our Advisory Board

Hannah Ritchie
Deputy Editor at Our World in Data

Nathaniel Bullard
Bloomberg columnist and MD of Business Climate

Gi Fernando MBE
Investor and entreprenuer

Kingsmill Bond
Energy strategist for RMI

Kanika Chawla
Chief of Staff at SEforALL

Meet our Board of Directors

Baroness Bryony Worthington
Founder, expert on climate change issues

Harry Benham
Chair, energy industry expert

Eugenie Teasley
Head of Impact at Amazon UK

Matthew McFeeley
Environmental lawyer at Richard Buxton Solicitors

Key statistics on Ember's data

An open global resource for policymakers, media and climate advocates.

88 countries and regions

with monthly electricity generation data

223 countries and regions

with annual electricity generation data

19,782 data downloads

460,888 page views

2.1 million page views

of Ember data on Our World in Data

Ember expands open data offering

Ember offers 17 updated open data tools that cover tracking global/regional electricity transition and measuring standards around coal mine methane emissions.

Where the world has come from and the state of the transition	Where the world is right now	Where the world is going vs where we need to be
Annual electricity generation dataset (plus price, emissions, capacity, etc.)	Monthly (and daily/hourly) electricity generation dataset.	Core dataset of 2030 national Renewable commitments, near-term forecasts, and 2030 national benchmarks
• Electricity Data Explorer • India Electricity Data Explorer (2023) • US Electricity Data explorer (2023) • Turkey Electricity data tools (2023) • Carbon price tracker • Coal mine-to-plant explorer	• European Power price tracker • Data tacker: Coal Mine Methane emissions (2023) • China's Solar PV exports (2023) • EU Power plan emissions • Asia Data finder (2023)	• 2030 Global Renewable Tracker (2023) • Live EU NECP Tracker • Electricity Interconnection in Europe • Europe's Clean Power pathways explorer • Indian State RES target and progress tracker • EU Power sector 2030 targets tracker

Who uses our data

Ember's groundbreaking open data not only establishes new benchmarks for quality but also remains a consistent go-to resource for a diverse array of partners, informing and enriching their work.

Data platforms

Our World in Data

statista

Government departments

Office for Budget Responsibility

Media agencies

CNN

The New York Times

NIKKEI

Bloomberg

BBC

REUTERS

FT FINANCIAL TIMES

South China Morning Post

THE WALL STREET JOURNAL.

The Washington Post

cipher BY BREAKTHROUGH ENERGY

CarbonBrief CLEAR ON CLIMATE

THE TIMES OF INDIA

Eco-Business

Other like-minded organisations

WORLD ECONOMIC FORUM

iea

THE WORLD BANK

CREA

UNFCCC

Tara

Institute for Energy Economics and Financial Analysis IEEFA.org

Agora Energiewende

Data and political influencers

Andrew Sissons; Hannah Ritchie; Joey Politano; Lion Hirth; Joey Politano; Al Gore's office; Miriam Leitão

> Ember continues to build on its impressive track record of providing, analysing and narrating the transformation of the electricity sector – the "go to powerhouse" for the global community working on this issue. Ember has provided underlying data and analysis to enable Civil Society Organizations in an ecosystem working on the power sector to get behind and advocate for the groundbreaking COP28 pledge to triple renewables to 2030 – a concrete outcome with a near term time frame that underlines the transformative role of wind and solar.

Rebecca Collyer
Executive Director
Pooled Fund for International Energy (PIE)
and ReNew2030

Key statistics on Ember's insights

Ember garnered widespread coverage by articulating positive, easy-to-understand data-based insights, that effectively communicated the accelerating clean energy transition.

55 publications

14,000 media hits ▲ 75% vs 2022

11 million social media impressions ▲ 3% vs 2022

500,000 website visitors ▲ 35% vs 2022

Ember data insights

Reports tracking the clean electricity transition

Global Electricity Review

A realistic summary of how “on track” the electricity transition is for limiting global heating to 1.5 degrees, the report analyses electricity data from 78 countries representing 93% of global electricity demand and includes estimated changes in the remaining generation. The report averages 1,000+ weekly views.

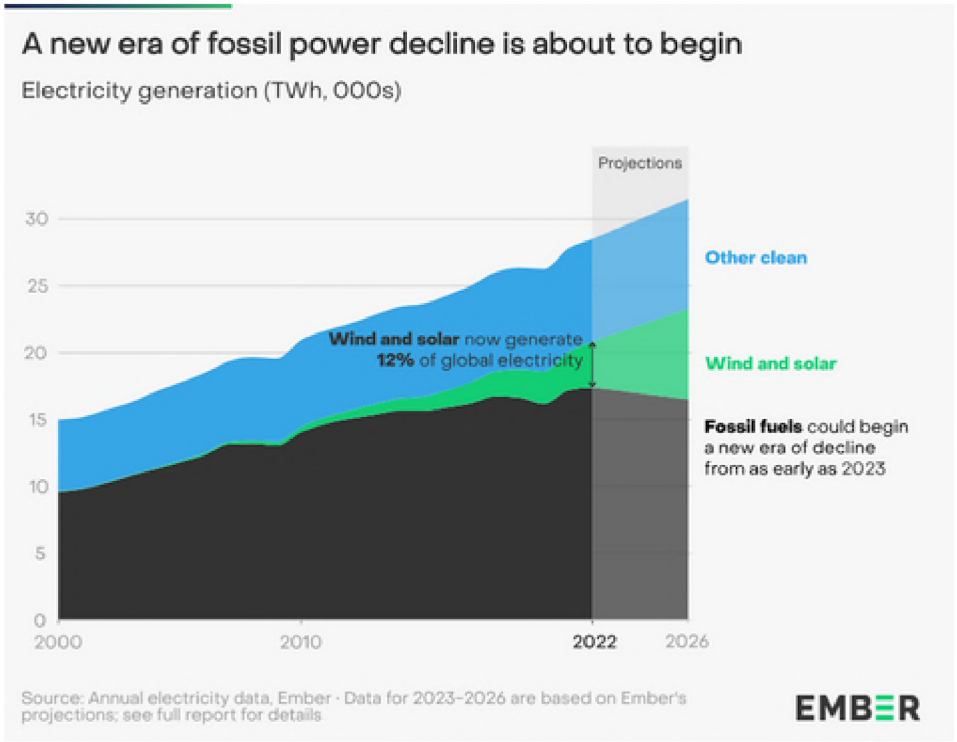
Media reach

1,330
media articles

£82 million
PR value

8.2 billion
potential reach

77
countries and regions



Featured in

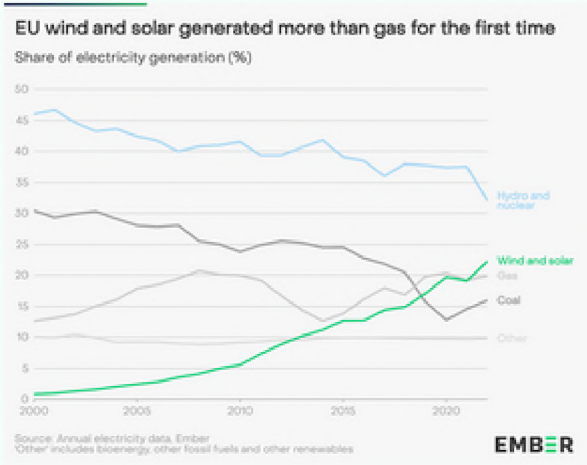
REUTERS · WORLD ECONOMIC FORUM · Bloomberg · CNN · BBC · 澎湃 · CNBC · FT FINANCIAL TIMES · THE WALL STREET JOURNAL. · ET THE ECONOMIC TIMES · KATADATA

Global and regional impacts

European Electricity Review

Ember's analysis of the EU electricity transition in 2022: what happened in 2022, what can we expect for 2023?

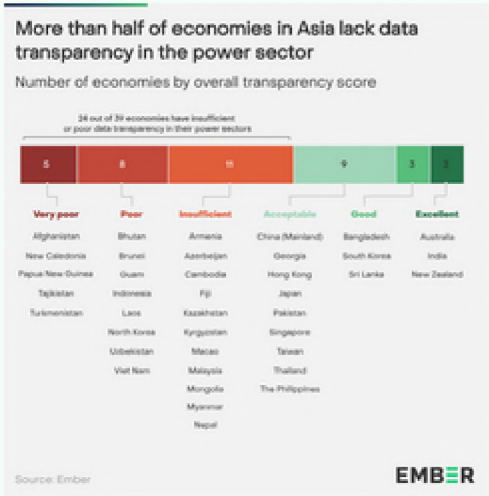
- Bloomberg, Reuters, World Economic Forum, Forbes
- New York Times,
- The Guardian,
- South China Morning
- India's Economic Times



Asia Data Transparency Report

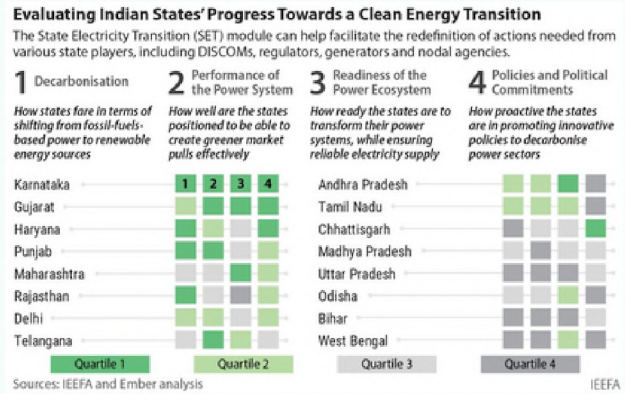
Understanding the state of data transparency for power sector decarbonisation in Asia to improve visibility on the availability of power sector data by conducting regional and economy-level assessments on data transparency in Asia.

- Weforum.org
- RFA
- Philippine Star

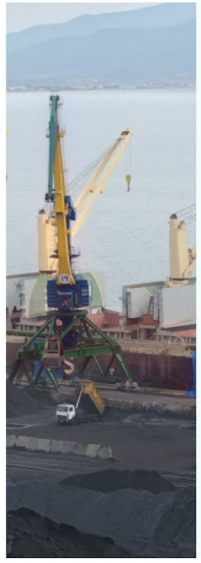


India's State Electricity Transition

Evaluating the preparedness of 16 Indian states to walk the electricity transition.

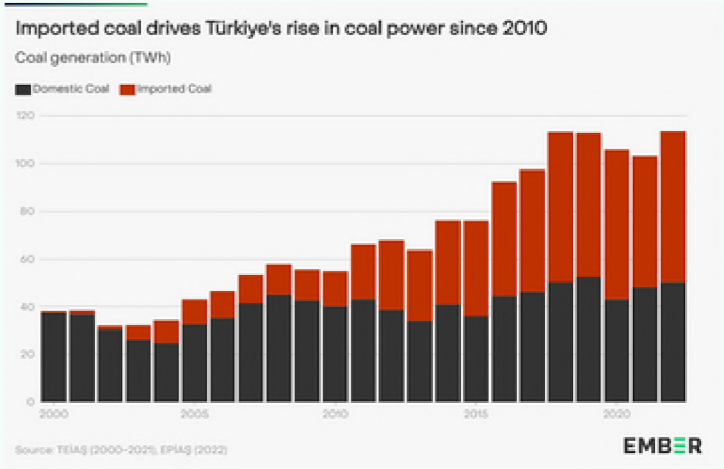


The Times of India, The Economic Times , Deccan Herald, Business Standard, CNBC, TV18, The Hindu, Saur News, प्रवक्ता.कॉम, GSTV



Türkiye Electricity Review

Türkiye coal generation returned to its previous peak in 2022, but not from domestic sources. Coal imports for power reached $5.3 billion while Russia became the main supplier.



AA.com, Haberturk, Milliyet

Ember narratives

Narrative campaigns sharing positive insights and shaping discourse on the clean electricity transition

Key Narrative 1

Tripling renewables is the single biggest action needed this decade for the climate

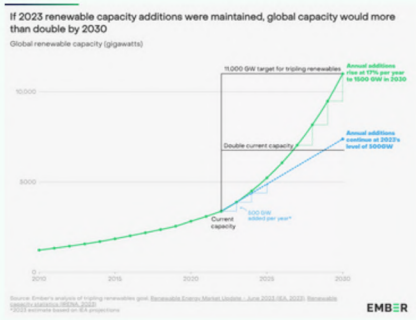
A tripling of renewable capacity by 2030 is within reach if governments take into account the recent growth in renewables.

Global and regional impacts

Tracking national ambition towards global tripling of renewables

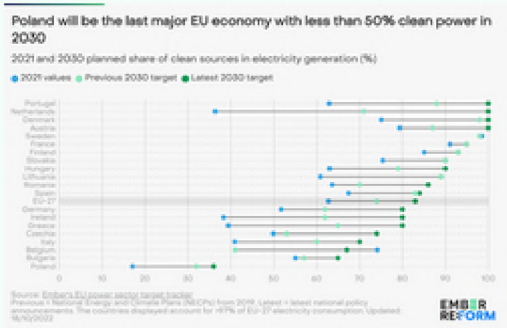
An analysis of 2030 national renewable targets shows that governments are already planning for a doubling, but there is room for much higher ambition.

Nikkei Asia, World Economic Forum, Financial Times



PEP2040: Progress or disappointment?

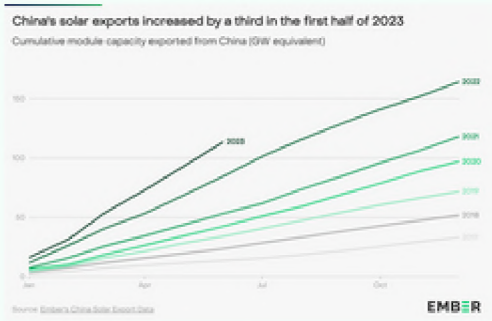
Poland could double renewables ambition and halve gas expansion in its upcoming PEP2040 energy strategy.



China Solar PV exports data

Exports of solar panels from China increased by 34% in the first half of 2023 compared to the same period last year

Indian Express, Electrek, News24

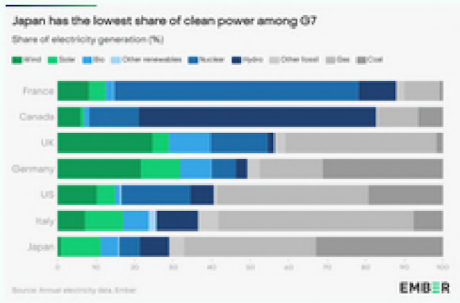


Global and regional impacts

Japan's missing piece of clean power

Japan needs to unleash its massive untapped wind potential to accelerate its power sector transition.

Independent, Asian Power, Renews.biz



Beyond tripling: Keeping ASEAN's solar & wind momentum

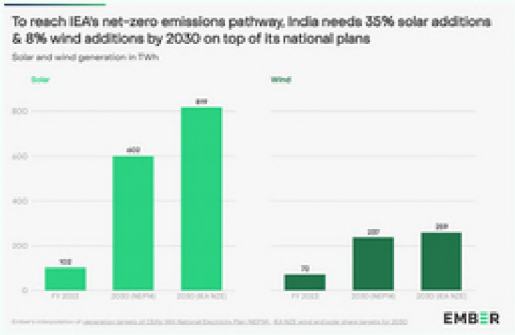
Southeast Asian nations require stronger policy support to stimulate solar and wind development, creating a more dynamic demand and supply for clean energy.

Business Times, RFA, The Saigon Times

Beyond Tripling: India needs $101bn additional financing for the net-zero pathway

In the next 8 years, India needs additional investment in renewable energy generation, storage and transmission capacity.

Indian Express, DowntoEarth.org, Economic Times

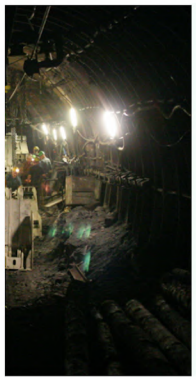


Key Narrative 2

Methane emissions from coal mines are underreported and overlooked – but are a major threat to the climate

Coal mine methane emissions are low-hanging fruit in tackling climate change, but the poor level of monitoring and reporting leaves governments blind to the scale of their emissions, and the opportunities to mitigate them.

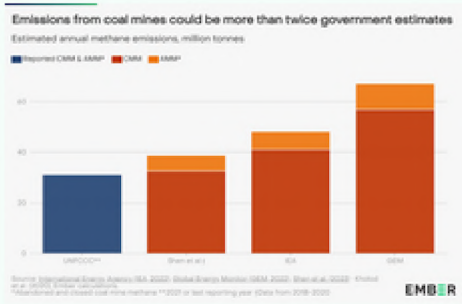
Global and regional impacts



In the dark: underreporting is a major risk

New analysis finds that methane emissions from coal mines may be twice as large as reported by governments, presenting a major risk for international climate commitments.

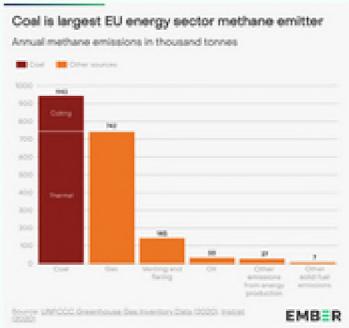
South Africa's Business Tech, Türkiye's Anadolu Agency



Major loopholes for coal mines in EU methane regulation

Two major loopholes in the EU methane regulation would allow coal mines to release additional methane emissions equivalent to Belgium and Czechia's annual CO2 emissions combined. Ember's recommendations could help Europe to realise one of the most cost effective ways to achieve its climate ambitions.

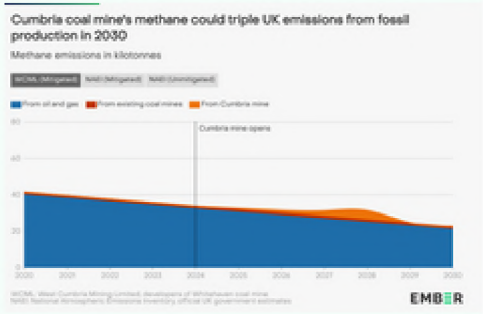
Euractiv, Rzeczpospolita, Bloomberg



Whitehaven coalmine approval jeopardises UK's international commitments

Analysis by Ember reveals that Cumbria's new coal mine will emit fifteen times more methane than estimated by the developer, because they underestimated the methane risk and overstated the potential for methane mitigation.

The Times



> It was not a difficult decision to make when Global Methane Hub decided to start supporting Ember's Coal Mine Methane Program in 2023. Ember is a well-driven, well-connected and well-liked organisation across the energy and methane spaces, and already six months into our official partnership, they have set themselves apart as the go-to-specialists on coal mine methane in key geographies. They have persisted in emphasising the importance—and missed opportunities—of reducing methane emissions from the coal sector, and made themselves relevant in ongoing policy processes. Furthermore, their X posts saves even your most dire climate and energy day.

Ida Klockmann
Program Officer, Energy
Global Methane Hub

Policy impacts

Ember has been at the heart of recent policy shifts in Europe and Asia. Our data insights are used by policymakers.

Ember’s influence on India’s new National Electricity Plan

In India, Ember has been championing the need to increase renewable energy (RE) and storage capacity since 2021, partnering with similar organisations and promoting our message through stakeholder engagement and media outreach.

In March 2023, India's National Electricity Plan incorporated Ember's suggestions, introducing 8 GW of Battery Energy Storage Systems (BESS) in place of 10.5 GW of previously planned new coal power capacity by 2027.

Read more of our work in Asia

Ember's impactful analysis alters the course of major coal mine expansion approval in Australia

In 2023, Ember exposed substantial underestimations of methane emissions under a coal mine expansion approval in Australia, that threatened the Safeguard Mechanism's legitimacy and climate targets.

Ember influenced the approval and led the coal mines to adopt a more accurate estimation method.

Now, leveraging this success, Ember is pushing for heightened industry standards in the Australian approval processes.

Read more about our work in Australia

Ember's influence on Australian climate policy to review methane emissions measurement laws

Ember spearheaded a reassessment of methane measurement and elevate mitigation measures, resulting in a notably improved Safeguard Mechanism for Australia's highest-emitting mines, in line with our policy recommendation.

Further, our recommendations on improving Monitoring and Reporting were incorporated in the Climate Change Authority review of Greenhouse gas reporting in December 2023 which starkly rebuked Australia's current methane measurement regime.

This has been officially communicated to the Climate and Energy Minister to be acted on and monitored throughout 2024.

Read more on our policy work in Australia

Ember’s impact on the EU Methane Regulation

Ember has played a pivotal role in shaping the coal sections of the EU Methane Regulation.

Our suggestions not only improved critical aspects of the regulation but also importantly countered false narratives from the coal mining industry.

In November 2023, the EU agreed to the Methane Regulation which incorporated a number of Ember’s technical and policy recommendations.

Read more about our CMM work in the EU

Ember's policy recommendations mirrored in EU Grid Action Plan

The EU Grid action plan released in November 2023 incorporated Ember's recommendations for grids in the EU, emphasising clean power integration, anticipatory grid investments, prioritisation of alternative grid solutions, addressing structural reasons behind underinvestment, expediting grid connection processes, and strengthening European manufacturing capacity.

Ember's achievements showcase a tangible impact on shaping a more sustainable and forward-thinking approach to grid development in the European Union.

Read more on our work in the Europe region

Ember’s policy influence shaped National Energy and Climate Plans in Central and Eastern Europe

Ember combined regional collaboration, energy modelling and policymaker outreach to influence key political events.

Ember’s policy advocacy with partners led to an increase in renewable targets in Poland, in Czechia the draft NECP matched Ember's recommendations, and the Czech Prime Minister endorsed our vision of an interconnected region. Slovakia made minor increases in wind and solar targets, and Estonia and Lithuania added offshore wind commitments in their NECPs, in line with Ember’s recommendations.

Read more on our work in the Europe region

Empowering campaigns

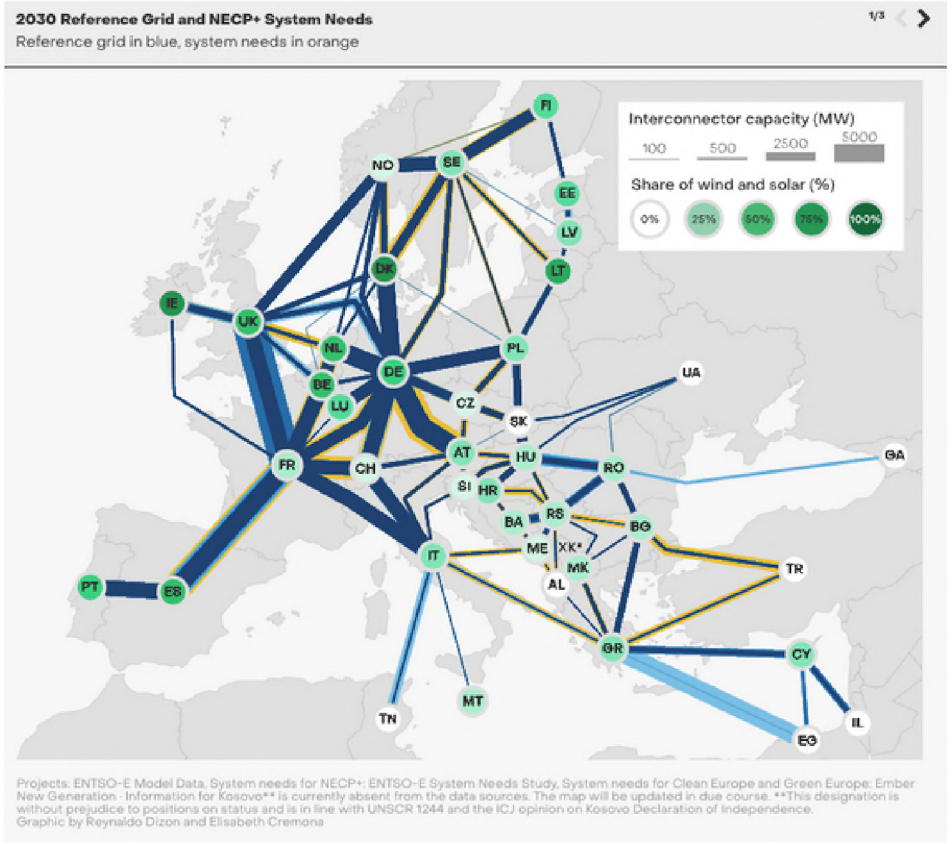
Ember’s data-driven insights empowered other organisations and their initiatives towards clean energy transition

Campaign to double interconnection in Europe

Ember has continued to be a source of evidence and expertise to civil society, ensuring that the latest data is shaping campaign strategy.

Ember has been instrumental in ensuring that electricity grid expansion is a key part of campaign strategy in Europe.

In June 2023, we launched a suite of activities to support NGOs, including an interactive map of interconnection needs, a campaign video created jointly with EEB and a workshop to share the latest evidence and insights from industry and our New Generation modelling.



Ember's research in 2021 sparks precedence against fossil fuel compensation in 2023

Ember's research in 2021 empowered the Dutch government by proving that the compensation claims by utilities like RWE and Uniper were unjustified as the fossil fuel plants were not profitable and thus deserved not be compensated for loss of earnings due to being forced to close early.

In Nov 2023, both the cases against the Dutch government through the Dutch courts and the Energy Charter Treaty have been declared inadmissible / rejected.

KLIMAATBELEID

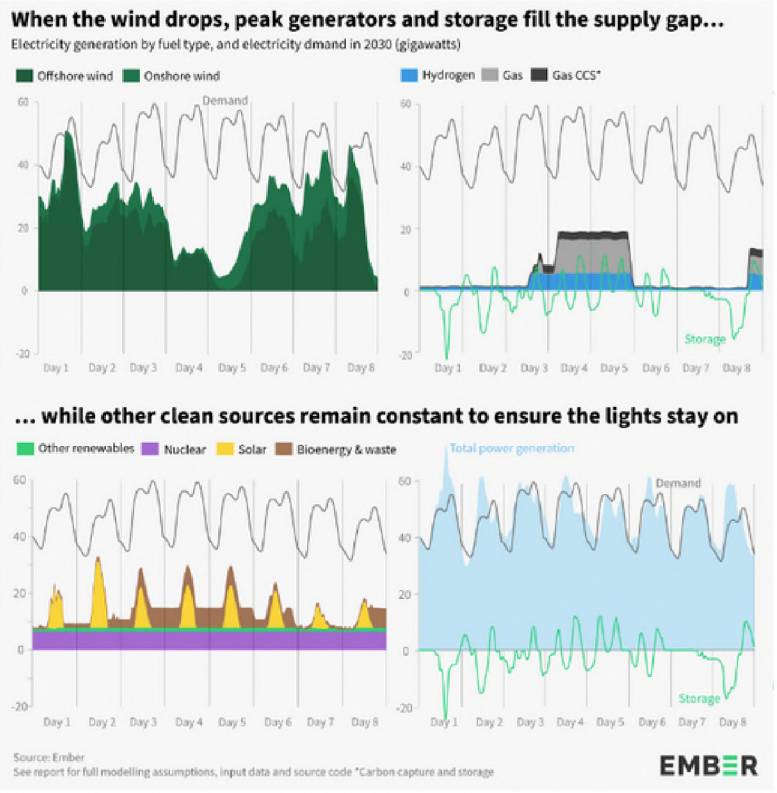
Kolencentrales uitzetten is ineens erg duur

De overheid moet zeker 1,5 miljard euro vergoeden aan drie kolencentrales, berekende *NRC*. Door de CO_2-reductie mogen zij minder draaien. De daaraan verbonden kosten vallen erg tegen.

A leading influencer on the UK power sector transition

With a short turnaround (just 2 months), Ember developed a new model of the UK power sector. Our research provided evidence that a 2030 target was credible - and the team at Ember provided balanced, evidence-based answers to Labour (opposition party) queries.

A clean energy sprint to 2030 will not only cut energy bills, as Ember's analysis shows, but will also have an international impact in accelerating the global power sector transition.



Meet our partners and sponsors

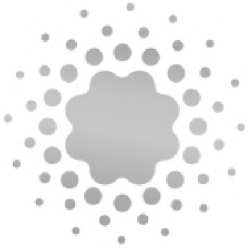
We gratefully acknowledge the philanthropic organisations that have funded us.

European Climate Foundation

Bloomberg Philanthropies

climateworks FOUNDATION

THE SUNRISE PROJECT



Global Methane Hub

Climate Giving

Pooled fund on International Energy

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We are EMBER.

www.ember-climate.org

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