

PAC scenario 2.0 in a nutshell

What is the PAC scenario?

The [Paris Agreement Compatible \(PAC\) scenario](#) describes how the EU could achieve **65% greenhouse gas emission reductions by 2030** on a pathway towards a **fully renewable energy system** that achieves **net zero emissions** in the year 2040. It's a science-based vision of how Europe's energy landscape should look like in line with the Paris Agreement and the 1.5°C threshold. The aggregated PAC scenario created from 2018 to 2020 for the EU28 describes an accelerated energy transition across the continent. It covers the future development of energy demand and supply until 2050 in industry, buildings, transport and agriculture, plus a rough overview of emission reductions. That makes it an NGO benchmark for assessing the level of ambition of other EU scenarios published by different stakeholders.

Who is behind the PAC scenario?

Climate Action Network (CAN) Europe and the European Environmental Bureau (EEB) co-drafted it between 2018 and 2020 with their members and external experts. It is the **first civil society-led scenario** reflecting European NGOs' key policy demands. More than 150 members and external experts contributed to the exercise in a series of [PAC scenario workshops](#).

What is the PAC project?

The PAC scenario has been developed from November 2018 to June 2020 under the first phase of the [PAC project](#) ('Paris Agreement Compatible Scenarios for Energy Infrastructure'). The first phase of the PAC project was financed by the German Federal Ministry for Economic Affairs and Energy (now: for Economic Affairs and Climate Action). Besides **CAN Europe and EEB**, the **Renewables Grid Initiative** (a network of 12 NGOs and 10 Transmission System Operators for electricity), and **REN21** (a global renewable energy community of 80 members from civil society, research, governments, industry and intergovernmental associations) form the consortium.

Why a second phase of the PAC scenario building?

Following CAN Europe members' request, the existing aggregated PAC scenario for the EU28 from 2020 should be updated and disaggregated to get fully-fledged **country-specific PAC scenarios** for EU Member States. These scenarios could, for instance, challenge the [poor ambition of National Climate and Energy Plans \(NECPs\)](#) to drive more ambition in NECP revision processes. In addition, we see the need to answer the question how much the implementation would cost. That is why in the second phase, we will derive **macro-economic indicators** from the PAC scenario on the EU and country-specific level. Last but not least, we found it important to better understand what are the **energy infrastructure needs** related to the rolling out of the PAC scenario.

What is the timeline for the second phase of the PAC scenario building?

The second phase of the PAC project started in **September 2021** and runs until **August 2024** with the same consortium and funder as during the first phase (see ‘What is the PAC project?’). During this second phase, CAN Europe is responsible for a new PAC scenario 2.0 modelling. This modelling exercise will be implemented by a team of professional modellers from the consultancy [CLIMACT](#), guided by the key assumptions agreed during the first phase of the PAC project. That will allow us to smoothly update our vision and understanding without reinventing the wheel.

- CLIMACT aims to hand over **first country-specific draft scenarios** by autumn 2022 in order to launch a first feedback round with CAN Europe members and experts, based on CLIMACT’s web-based tool, the [Pathways Explorer](#).
- By early 2023, national member organisations ideally should be able to present their **country-specific PAC scenario**, in particular to influence the update of their NECPs.
- By spring 2023, **macro-economic indicators** will be derived.
- By autumn 2023, we will further assess the **infrastructure needs** (electricity grids, gas pipelines, hydrogen networks, district heat networks). For this purpose, CLIMACT will use the [PyPSA model](#) to detail and optimise the EU-level and the country-specific PAC scenarios.

How can you engage in the second phase of the PAC scenario building?

Like during the first phase of the PAC project, CAN Europe organises a series of **PAC scenario workshops** for members, partners and like-minded guests from science and industry. The PAC scenario workshops allow interested stakeholders to discuss key assumptions and get an update on the progress of the modelling exercise. With a series of **bilateral national calls**, the CAN Europe secretariat guides the national member organisations through the data collection and modelling. In addition, CAN Europe launched an **advisory committee** to gather academia and experts. This committee is of course open to interested members. It ensures a robust scientific peer review and discusses methodological challenges. During the weekly **Renewable Energy Working Group meetings** of CAN Europe, members get an update on the progress of the PAC scenario building.

What exactly will you get from the second phase of the PAC scenario building?

The updated EU27-wide PAC scenario as well as the country-specific PAC scenarios for EU27 Member States (and potentially UK, Norway and Switzerland) will again cover **all sectors of energy demand and supply** (industry, buildings, transport, agriculture) in five-year intervals from 2020 to 2050. In contrast with the first aggregated PAC scenario published in 2020, **more detailed data on greenhouse gas emissions** will be provided, including non-energy related emissions and the role of land use, land use change and forestry. For the first time, **macro-economic indicators** will be derived from the PAC scenario, such as energy system costs and benefits. In addition, the **infrastructure needs** linked to the roll-out of the PAC scenario are assessed, e.g. the need for electricity grids, for gas pipelines, hydrogen networks or district heat networks – and how these interact with energy demand and supply.

How much time do national members need to invest into the PAC scenario building?

The chosen timeline and tools (see 'What is the timeline...?') allow national members to deepen the modelling exercise for their country according to their own capacity. When filling in the input parameters for the modelling with the [Pathways Explorer](#), members who do not want to spend more than a few days on it can focus on defining the most relevant key parameters for their countries, either by **providing their own data** or opting for one out of **four pre-set levels of ambition**. The time demand on members' side depends a lot on the availability of country-specific data, for instance existing scenarios that members can integrate into the Pathways Explorer; or targets that members want to double-check with regards to their feasibility under different assumptions.

In what format will the results be published?

The country-specific PAC scenarios will mainly be developed and published on the web-based platform, the [Pathways Explorer](#) under an [open licence](#). Data and charts from the platform can freely and easily be downloaded, shared and adapted. You are free to use them for comparisons with other scenarios or as input into any other non-commercial work. The platform allows CAN Europe members to easily extract the most relevant data and charts for their own publications or translations. Under the project, the CAN Europe secretariat itself will compile **one macro-economic analysis** of energy system costs, savings of fossil fuels and their import costs, and the costs of not acting against climate change. The CAN Europe secretariat will also develop with national member organisations **at least nine country-specific briefings on energy infrastructure needs**, for instance with a mapping of future electricity, gas and hydrogen networks. On top of that, the modellers from CLIMACT will prepare an executive summary with a self-standing Powerpoint presentation on the key results. This format also could be used by CAN Europe members. The platform language and project language is English. That means that the CAN Europe secretariat itself currently does not foresee implementing any translations to national languages.

Support

For any further question, do not hesitate to reach out to

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For an introduction into the PAC scenario 2.0, you can also watch the recording of our PAC scenario workshop of 5 April 2022:

https://us06web.zoom.us/rec/play/xU9zzyb3WdEHPIJSmY9FJkfyHjtzbfqm0IHJilrbRI-tQulvw-a2u_E3-yNj6a-tW_NFjk-cleVfMw6.iH6cf4xKjBQBpJwo (Passcode: 0NpML*Ak)