**PRESS RELEASE**

**Harnessing the global osmotic potential to produce competitive green electricity: French duo nominated for the European Inventor Award 2024**

* **Bruno Mottet and Lydéric Bocquet developed technology that uses a specialised membrane to harness the energy from the salt concentration difference between streams of water**
* **Osmotic power has the potential to sustainably meet growing energy needs, and reduce fossil fuel reliance by raising the global supply of renewable energy**
* **The two scientists are finalists in the ‘SMEs’ category, competing against a Finnish team and a Polish one. The winners will be announced during the Award ceremony on 9 July in Malta**
* **Voting for the** [**Popular Prize**](https://a.cstmapp.com/login/973466/?vote=144556_707562133&lc=eng)**, awarded by the public, is open as of today**

**Munich, 16 May 2024** – The global electricity demand is expected to reach almost 30,000 terawatt-hours (TWh) by 2025, according to the [International Energy Agency](https://iea.blob.core.windows.net/assets/255e9cba-da84-4681-8c1f-458ca1a3d9ca/ElectricityMarketReport2023.pdf). Although solar and wind power will inevitably cover some of this demand increase, fossil fuels are still expected to play a major role in the future global electricity mix. New sources of renewable energy are thus needed to reach a net-zero scenario, ones which would not be subjected to weather conditions and other infrastructure limitations. The scientists Bruno Mottet and Lydéric Bocquet invented an **osmotic technology that works as a reversed desalination process** to produce green electricity competitively and non-intermittently. For this achievement, **they are finalists in the ‘SMEs’ category of the European** **Inventor Award 2024**, chosen by an independent jury from a selection of over 550 candidates.

**A pathway to a competitive non-intermittent renewable energy source**

The world's estuaries and deltas could be used as a reliable source for producing electricity through osmosis. To **extract this energy where freshwater and seawater meet**, Mottet and Bocquet developed the Ionic Nano Osmotic Diffusion (INODâ) technology on the basis of research conducted at the French National Centre for Scientific Research (CNRS). Indeed, instead of focusing on turbine technologies and creating electricity by forcing saltwater through a membrane, the INOD® technology leverages nanoscale phenomena to generate unprecedented levels of power output with ionic currents. During this process, salt ions travelling from the high salt concentration of seawater to the low concentration of river water through a selective membrane result in a charge difference that produces an electric current. **The ion-selective specialised membrane developed by the two scientists is the main component of the technology and is made from a bio-sourced material.**

To scale the technology, the inventors co-founded Sweetch Energy with their partners Nicolas Heuzé and Pascal le Mélinaire. In 10 years, they managed to turn a scientific discovery focusing on a nanotube into an industrial solution. Today, the company is collaborating with Compagnie Nationale du Rhône to develop an osmotic pilot power plant called OsmoRhône, which will be completed in 2024. The **pilot plant will harness osmotic energy from the Rhône, on which 500 megawatts (MW) of power could be installed at scale, providing clean electricity to over 1.5 million people in the next decade**, equivalent to the populations of Marseille, Barcelona, Amsterdam or Montreal. “*We worked for more than a year to convince the French government and European Commission to recognise the potential of osmotic energy as a future strategic energy asset for Europe’s electricity network*” Mottet explained.

Sweetch Energy is also collaborating with EDF Hydro to roll out osmotic energy on a large scale in France and abroad.

**Startups: sparking innovation**

Bocquet, a multi-disciplinary physicist at the CNRS, wanted to use his expertise to benefit society. Mottet, impressed by Bocquet's work, collaborated with him to establish Sweetch Energy in 2015, serving as Chief Innovation Officer and Bocquet as an advisor.

“S*tartups can sometimes be the missing link between the new ideas and concepts emerging in the research labs, and their use for ground-breaking technologies at the industrial scale,”* Bocquet added.

The French team is one of three finalists in the ‘SMEs’ category of the 2024 European Inventor Award. The other finalists in this category are Finnish inventors Sirpa Jalkanen and Markku Jalkanen for their work on a targeted immunotherapy to treat cancer and a Polish team led by Olga Malinkiewicz for their innovative thin-film perovskite solar cell printing technology. The EPO will announce the winners of the different categories during a ceremony livestreamed [here](https://www.epo.org/en/news-events/european-inventor-award/streaming?mtm_campaign=EIA2024&mtm_keyword=pressrelease&mtm_medium=press) from Malta on 9 July 2024. In addition, the EPO will reveal the Popular Prize winner, chosen by online public vote. Voting will remain open until the day of the ceremony.

Find more information about the invention’s impact, the technology and the inventors’ stories [here](https://www.epo.org/en/news-events/european-inventor-award/meet-the-finalists/bruno-mottet-lyderic-bocquet-and-team?mtm_campaign=EIA2024&mtm_keyword=pressrelease&mtm_medium=press).

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**About the European Inventor Award**

The European Inventor Award is one of Europe's most prestigious innovation prizes. Launched by the EPO in 2006, the award honours individuals and teams, who have come up with solutions to some of the biggest challenges of our time. The European Inventor Award jury consists of inventors who are all former finalists. To judge proposals, the independent panel draws on their wealth of technical, business, and intellectual property expertise. In 2024, the jury is chaired by Wolfgang M. Heckl. All inventors must have been granted a European patent for their invention. Read more [here](https://www.epo.org/en/news-events/european-inventor-award?mtm_campaign=EIA2024&mtm_keyword=pressrelease&mtm_medium=press) on the various categories, prizes, selection criteria and livestream ceremony to be held on 9 July in Malta.

**About the EPO**

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