HYDROGEN POWERED GENERATORS FOR FAST CHARGING

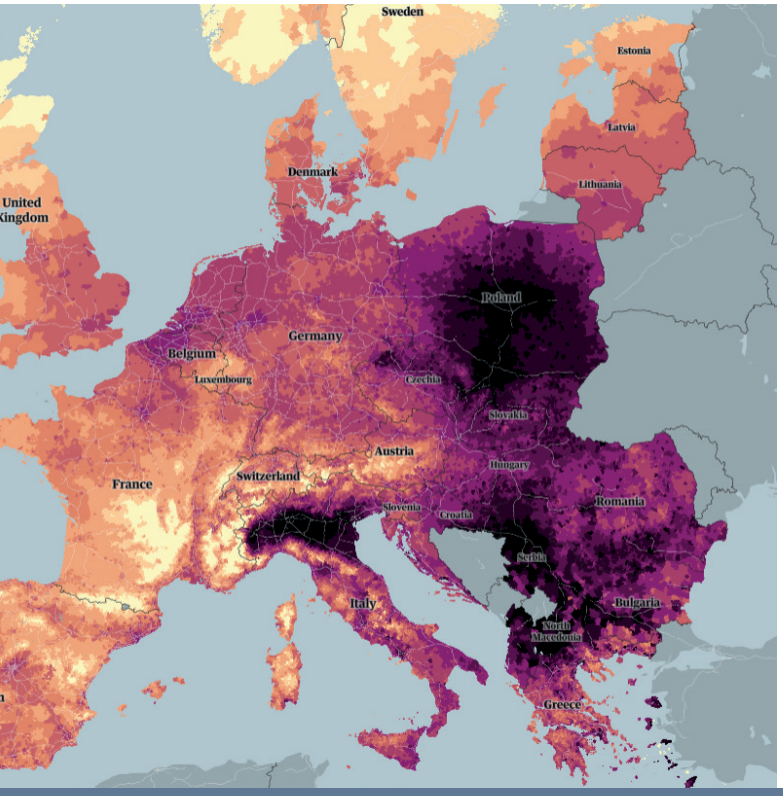
INTERVIEW WITH ALBERTO CAETANI

Interview by Bluebook srl

CASE STUDY: INNOVATION IN VEHICLES

Alberto Caetani at AEW Arnhem, Netherlands

Alberto Caetani is the Chief Operating Officer of Clean City: a Swiss engineering company based in Lugano.
The company offers off-grid fast charging services for electric vehicles to private and public entities.



Off-grid power generator May, 7 2024 - AEW Arnhem, Netherlands

Air pollution in Europe September 2023 - The Guardian

WHAT IS THE BUSINESS MODEL OF CLEAN CITY?

Clean City's business model involves building off-grid power stations tailored to the specific needs of our customers, ranging from small to large scale. Beyond constructing these power stations, we also offer fleets of electric vehicles, enabling customers (such as bus, truck, car, or ship operators) to replace their old polluting fleets. To facilitate this, we provide financing through a consortium-backed Special Purpose Vehicle (SPV) or Newco. This structure eliminates the need for upfront capital expenditure (CAPEX) from the final customer, who instead incurs operating expenses (OPEX) on a per-vehicle-per-kilometer basis.

CAN YOU TELL US IN DETAIL ABOUT YOUR PATENT?

Our chairman developed a patent that's owned by the Group. It's a US patent, as the US is currently our primary market for electric mobility, and US patents offer strong worldwide protection. We've since extended this patent globally.
This patent focuses on directly producing electrical energy in direct current (DC) mode. This is ideal for powering the batteries of various energy vectors, such as hydrogen, biogas, natural gas, or LNG. These vectors are fed into a fuel cell, which converts them into DC through an electrochemical process. Producing DC directly is crucial, as it can be used directly by batteries. This gives us a significant advantage over grid-transmitted energy. We avoid the inefficiencies and costs associated with energy transmission and transformation, as we produce DC on-site.

Clean City's mission is to offer solutions to public and private entities to replace their polluting vehicles with a brand new fleet of electric vehicles also supplying the needed clean energy for their fast charging.

WHAT PROBLEMS DOES YOUR BUSINESS MODEL RESPOND TO?

Our patented solution offers three applications: stationary power plants (10-50 MW), smaller mobile units (120 kW-2 MW), and floating docks for maritime use. These address the 'bottleneck' problem of grid peak saturation, allowing us to provide the additional peak power needed by customers. Unlike traditional grids, which have limitations, our Reverse Engineering process enables us to create dedicated power plants on demand, solving the grid's technical constraints. Our business model is particularly beneficial for companies struggling to finance a transition to net-zero carbon transport due to budget constraints. We provide full financing, eliminating upfront CAPEX for customers. Instead, the investment is spread out over OPEX, making the transition more manageable. This allows customers to gradually pay for the infrastructure and vehicles over time, eventually owning both.

HOW DOES IT FIT INTO A BROADER CONCEPT OF CIRCULAR ECONOMY?

Environmental sustainability is our top priority. We're committed to achieving a truly circular economy through partnerships with other companies. For example, some of our partners process solid urban waste to produce hydrogen, which we then use in our systems. This means that even a bag of waste can ultimately fuel buses, ships, or trucks, with water as the only byproduct.

A MESSAGE FOR YOUNG PEOPLE INTERESTED IN THIS SECTOR

I believe we are witnessing a truly revolutionary shift in energy, comparable to the industrial and digital revolutions. This energy revolution offers a bright future, especially for hydrogen, which will become increasingly affordable and accessible. I encourage everyone, young and old, to embrace this new era with enthusiasm, passion, and interest.