

MAKING USE OF WASTE METHANE

→ Landfills and mines across the world release methane gases. These emissions can be utilized as a new energy source – providing electricity, heat and mitigating climate change at the same time.



ECONOMIC

Green Gas currently generates electricity and heat for approximately 400,000 households.



ENVIRONMENTAL

According to Green Gas, the emissions neutralized by its plants are equivalent to the emissions of over half a million cars. Methane is a far more potent greenhouse gas than carbon dioxide.

THE SOLUTION

! Methane gases released from mining operations and landfills pose a serious threat to our climate. Dutch-based Green Gas International provides a solution for collecting these gases and producing energy from them instead.

In the case of coal mines, three methods of gas extraction are combined: gas drained directly from the seams before mining, gas drained from gas horizons affected by the mining process, and gas collected from voids left behind after mining. After collection, the gas can be used for combined heat and power (CHP) generation. Green Gas International has installed more than 200 of these plants, with a combined capacity of more than 150 MW.

WHY A SUSTAINIA100 SOLUTION?

? Currently operating in Europe and the Americas, the Green Gas approach can be expanded to developing countries, thereby turning waste gases into useful energy for electricity and heat. Though we should conserve resources, and recycle as many of them as possible in the sustainable society, mines and landfills will remain a part of the sustainable future. Optimizing the resource use of these activities, and reducing their environmental impact, makes this a sustainable solution.



www.greengas.net



CARS AS A BATTERY FOR THE GRID

→ Advancements in vehicle-to-grid (V2G) systems make for a better usage of resources.

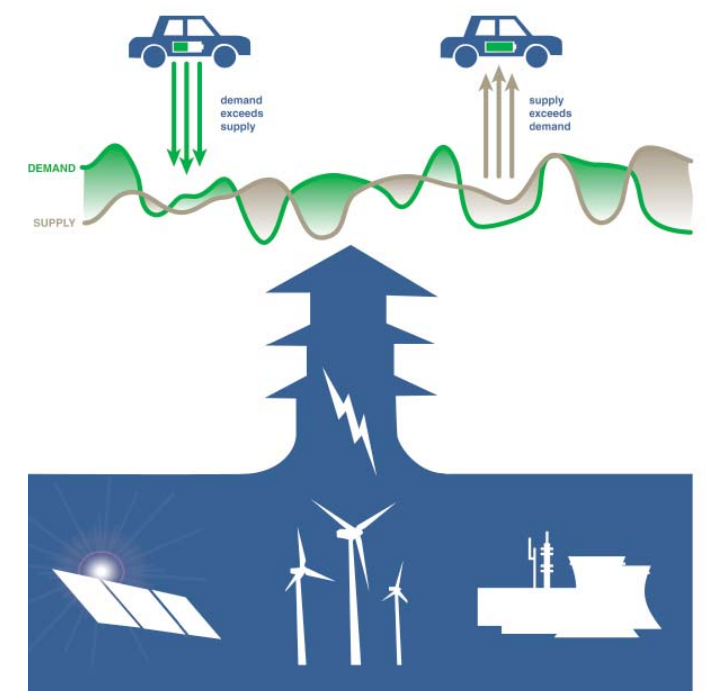
THE SOLUTION

! American start-up Nuvve enables electric vehicles to offer power capacity to the grid and generate revenue for the EV owner. Turning the fantasies of grid operators into reality, this solution effectively provides distributed energy storage to the electricity grid. But it also reduces the net cost of electric vehicles, still one of the biggest hurdles to their wider adoption.

Cars are parked nearly 95% of the time. This solution connects electric vehicles to a grid operator. When needed, energy stored in a vehicle's battery pack is sold to the grid. The EV owner makes a profit, and the grid operator is able to maintain stability and absorb higher rates of fluctuating renewable energy into the grid. Nuvve's V2G solution can integrate electric vehicles into the existing grid and help energy distribution companies reduce their required upgrade costs.

WHY A SUSTAINIA100 SOLUTION?

? An electrical vehicle that runs on renewable energy such as wind or solar power is a true zero-emission vehicle. Moreover, leveraging the available battery capacity of a parked EV conserves resources, offers financial benefits for the vehicle owner, and provides stability to the energy system.



ECONOMIC

According to Nuvve, an EV owner can earn up to \$10,000 over the life of the car by providing vehicle-to-grid services.



SOCIAL

In the United Kingdom, air pollution, primarily from vehicle emissions, is estimated to cause 24,000 premature deaths annually.¹



ENVIRONMENTAL

Nuvve's technology enables storage of surplus electricity from fluctuating renewable energy sources such as wind and solar power.



1. BBC, "Health: Exhaust emissions": www.bbc.co.uk

www.nuvve.com