IJGlobal ESG Excellence Award – MVV Energie

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20/10/2023

In the flurry of award write-ups one was missed out, and – as was inevitably going to be the case – it's one of the most significant trophies to be presented at the IJGlobal ESG Awards 2023… the excellence award.

MVV Energie wins the IJGlobal ESG Excellence Award having wowed the independent panel of judges with one saying "brilliant impact and the outcomes of these policy changes are clear to see" and another labelling it "a poster child for energy transition in a utility".

The judge continues: "MVV is not simply doing 'less bad', it is actively changing, rapidly and with clear, measurable targets. It has achieved innovating across its own energy systems and is also working with clients and customers to transition them too. This certainly sets a new benchmark for the industry."

Another judge said: "This is a compelling submission demonstrating impact, innovation and also focusing the social side – namely reliability and affordability – which are material topics for the utility sectors.

"I also liked the project examples provided, covering 3 different innovative solutions to produce lower carbon energy, which also involved engaging with multiple stakeholders and developing new innovative solutions."

One of the more cautious judges said: "While I'm not sure about the gas content, I feel the business is really evolving to find sustainable energy solutions for the future."

Yet another judge added: "MVV is clearly seeking to be a leader in sustainability having been first in establishing ambitious ESG and net-zero target goals… more aggressive than government requirements."

The compliments came thick and fast: "The company's specific projects described provide strong evidence of using innovation to advance ESG goals, sometimes creating novel ideas and solutions for process optimisations. The ESG and GHG impact described is also quite material in the context of the company and go beyond CO2 emissions."

The comments were rounded off with: "Decarbonising at the local level is critical to address climate change. What I like is the delivery of difficult and innovative projects – which too often isn't happening."

MVV Energie

MVV Energie is a German integrated utility owned by the City of Manheim and Igneo Infrastructure Partners that operates along the full energy supply chain, producing and distributing electricity, gas and district heating and acting as a

service provider to retail customers.

MVV was one of the first among its peers to recognise the importance of transitioning to net zero. In October 2021 – supported by its 2 major shareholders, the City of Mannheim and Igneo – MVV published a target to reach net zero by 2040 (5 years earlier than the German government's aim) along with interim targets to reduce Scope 1 emissions by more than 80% by 2030 and Scope 2 and 3 by more than 80% by 2035 compared to 2018.

In 2021, it became the first German energy company to have these targets validated by the science-based targets initiative (SBTi) according to a 1.5C pathway – having been the first European company to commit to SBTi, in 2015.

In 2022, MVV also became one of only three companies worldwide to have its targets verified as "net zero compatible" by SBTi. This required demonstrating a concrete plan to reduce Scope 1 and 2 emissions by more than 99% by 2040 and Scope 3 by 95%, before any reliance on carbon offsetting.

Despite major turmoil in German energy markets in 2022, MVV doubled down on these targets and made significant progress on its commitments.

MVV is investing €3 billion from 2016-26 to implement its energy transition strategy, while upholding a safe, reliable energy supply for its customers. In full year 2022, it invested €335 million – the highest volume of investment in the past 6 years.

MVV's Mannheim Model for decarbonisation involves 3 key elements: decarbonising district heating; increasing renewable electricity generation; and providing green solutions for customers.

Decarbonising district heating is one of the most challenging and most important elements. Warm water and heating homes currently accounts for more than a third of Germany's CO2 emissions. As the country's second-largest provider of district heating, MVV will be key to decarbonising this sector.

MVV's plan to achieve carbon neutral heat supply builds on a bottom-up replacement of all fossil-fuel heat generation capacity with green sources, including sustainable biomass, river heat pumps, geothermal energy, biogenic sewage sludge incineration and waste industrial heat – all enabling an exit from fossil fuels by 2030.

Secondly, MVV aims to generate all electricity from renewable sources and by 2026 will at least double its proprietary green electricity generation compared to 2016. This will include connecting 10,000MW of electricity from renewable sources such as wind, solar, biomass and biomethane to the grid, equivalent to the installed capacity of ten large power plants.

Finally, MVV helps customers implement their own energy transition by providing green solutions such as large-scale roof-top PV systems, EV charging infrastructure, heat pumps, and green energy supply for data centres.

Mannheim Model

MVV is implementing its Mannheim Model at full steam and the net zero plan will deliver a reduction of almost 8 million tonnes of CO2-equivalent by 2030 and a further 1,500,000 tonnes by 2035 (compared to 2018). This equates to more than 1% of Germany's total emissions in 2022.

As at the end of 2022, MVV had reduced Scope 1, 2 and 3 emissions by 18%, saving almost 2 million tCO2e on an annualised basis (compared to 2018).

Since 2017, MVV has connected renewable energy plants with a combined capacity of 3,229MW to the grid, 476MW alone in FY 2022. Renewable energy now accounts for 32% of MVV's total electricity generation, and green heat generation accounts for 39% of total proprietary heat generation.

MVV's investments in cutting-edge infrastructure and technology (like the river heat pump) also aim to have an impact beyond the company's own operations, by setting a blueprint for low-carbon, smart cities across Europe.

River heat pump

One of the best examples that the submission cites is MVV's innovative river heat pump on the River Rhine which started construction in April 2022 – a €15 million investment and a key part of its decarbonisation strategy for district heating in Mannheim.

The submission states: "The heat pump will be one of the largest in Europe and is one of the first 5 of its kind being built in Germany. It will operate 24/7, year-round, providing 20MW heating capacity and 7MW electrical capacity. The heat pump will draw on environmental heat in the Rhine to provide heating completely emissions-free, with no negative impacts on the river ecosystem.

"The heat pump works on the same principle as a domestic refrigerator, in reverse. Heat (thermal energy) from Rhine river water is used to evaporate refrigerant in the heat pump. The refrigerant vapour is compressed to increase the pressure and temperature. The heat generated by this is then used to heat the district heating water through condensation in a heat exchanger.

"Water of 83-99°C can be achieved, and will be stored or fed directly into the district heating network. The refrigerant is then re-liquefied and re-used in the heat exchanger, and all water extracted from the Rhine is returned to the river.

MVV will commence operations of the river heat pump in 2023. Up to 39% of annual proprietary heating volumes for the region are already generated on a CO2-neutral basis, and the river heat pump is a key step in efforts to continue this decarbonisation."