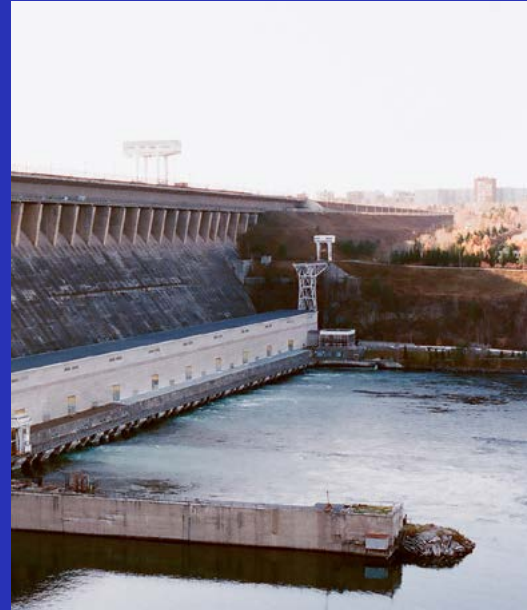


## Swedish Hydropower - Ready to be Tapped

Hydropower is Europe's largest source for renewable energy and has great potential to meet an elevated energy consumption and increased demand for green energy. What is lesser-known is that Sweden along with Norway have a large untapped potential and is ready to deliver.

With a history in hydropower stretching as far back as the early 1900s and capacity to provide industry, infrastructure and homes with close to half of the country's needed power, there is no questioning the capabilities of Swedish hydropower.

With an increased demand for renewable and green energy in Europe, whilst energy consumption simultaneously rises, the case for Sweden as a national and international provider of green energy has never been stronger.



## Why hydropower and Why Sweden?

What makes hydropower unique is its ability to produce energy when it is needed the most, think of it as a large green battery. Unlike solar and wind power which produces energy whenever the weather conditions are right, hydropower plants can both produce energy continuously and accumulate energy by storing large amounts of water that is released in times of increased demand. The ability to quickly respond to changes in demand and availability of other more circumstantial renewable energy sources makes hydropower the most versatile and flexible choice.

**“HYDROPOWER PLANTS CAN BOTH PRODUCE ENERGY CONTINUOUSLY AND ACCUMULATE ENERGY”**

What makes Sweden's and the Nordics' hydropower unique is that our green battery is big enough for not only the Nordics but also for large parts of Europe and the European Union. The water reservoirs of hydropower plants in the Nordics, mainly located in Norway and the northern parts of Sweden, make up close to half of Europe's total reservoirs.

In Sweden specifically, 80% of the produced hydropower stems from the northern parts of the country with an installed capacity of 16 300 MW. This is also the location of Harsprånget, Sweden's largest hydropower plant, with a total capacity of 830 MW and a yearly production of more than 2 TWh. Essentially, the green battery of hydropower in the Nordics has immense capabilities with unique flexibility, independent of timing, with ability to respond to international demand in a matter of seconds and for the duration of months.

### Sweden makes for DC:s with

- An abundance of renewable and fossil free energy
- Fast time to market and easy-to-do business environment
- Excellent connectivity and grid reliability
- 24/7 renewables and mission critical industrial tradition
- Long term stability – both for pricing and geopolitics
- Lowest power prices for data centres within EU.
- Educated labor market
- Political stable countries
- Sweden energy mix 14 g CO2/kWh vs Germanys 401 g CO2/kWh (2019)

# 24/7

In addition to benefits above, Vattenfall – the largest power company in Sweden, can deliver 24/7 matching: an hourly match of consumption and production of renewable energy. Previously, regulations have ensured that the amount of energy sold corresponds to the amount produced. However, this has been based mainly on yearly averages of consumption and production. This means that businesses cannot know if consumption matches production on a daily basis. Today, Vattenfall offers a first-of-its-kind solution, developed together with Microsoft to offer true transparency, 24 hours a day, every day of the week.

Median life-cycle carbon equivalent intensity (gCO<sub>2</sub>-eq/kWh)

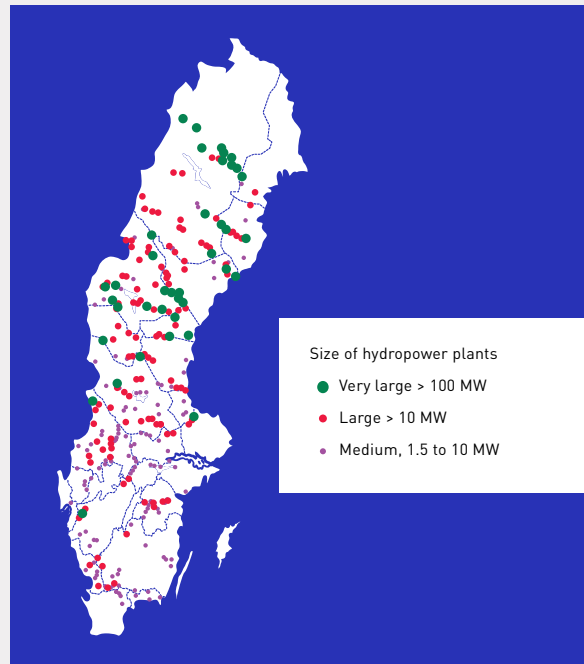


## Swedish hydropower – an untapped resource

Just as Sweden makes the perfect case for building data centers, it is the perfect place for green energy. Swedish hydropower is independent of weather, unlike solar and wind, and can store and release water in times of rising demand making it the most flexible choice. On an everyday basis, emissions are next to zero, and from a lifecycle perspective only wind power releases less emission.

All in all the 2 000 hydropower plants in Sweden, is a green battery ready to be tapped of its full potential. It is not a question of whether it will be tapped, it is a matter of when. The question is which industries will lead the way to the greenest choice.

**“SWEDEN HAS MORE THAN 2000 HYDROPOWER PLANTS WITH AN INSTALLED EFFECT OF 16 300 MW.”**



Node Pole develops and simplifies investments in energy intensive industries in Sweden, such as datacenters, material refinement and battery production. We offer consultants, experts and project managers who know the process from interest to deployment.

Don't hesitate to reach out to learn more about how we can enable your company a secure, sustainable and efficient future in Sweden.



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