

Richard van Hooijdonk

KEYNOTE

AI & the future of energy and utilities

By 2040, AI could run the grid second by second and let the power demand of data centres flex with supply. What that delivers depends on the people who manage the grid and the pipes.

Millions of rooftops, batteries and charging points together make up tomorrow's energy system. AI links them into a network that looks ahead, shares out power and corrects itself.

With grids full and capacity scarce, trend watcher and futurist Richard van Hooijdonk looks at how AI helps get more out of existing infrastructure, or build better infrastructure. Heat pumps and charging points all want power in the same evening hours, and a single new data campus can draw as much as a city. In more and more places, businesses are on a waiting list for a grid connection. AI helps use the existing grid more cleverly: it forecasts solar output quarter-hour by quarter-hour, calculates how much a line can really carry and lets thousands of batteries act as one power plant. Water companies use sensors and AI to tackle leaks and run treatment more efficiently. Much of the technology already exists. The real question is whether organisations built, rightly, around certainty can learn quickly enough to work with systems that help plan and steer. The keynote shows what is running now, what is in trials and which scenarios lie five to fifteen years ahead: a grid that runs itself, a nuclear plant next to the data centre, power from space and geothermal heat in far more places. Once AI helps plan and steer, who takes which decision changes too, from grid operator to household. Clients in the field include TenneT, Schneider Electric, Siemens and Signify.



RICHARD VAN HOOIJDONK

Richard van Hooijdonk is a trend watcher, futurist and international keynote speaker. Many trend watchers and futurists look at the future from a distance. Richard van Hooijdonk lives in it. His team consists of people and AI agents, and he has several chips implanted in his body. He speaks about AI and new technology, the organisation of the future and leadership in the AI era. He takes you into a future you can barely picture today, and shows how you can steer it yourself.

3,000+ keynotes	**650,000+** participants	**30+** countries	**Bestselling** author

What the keynote covers

NOW AI in energy and utilities

What AI already does on the grid, in the market and at the water company, and where it is heading.



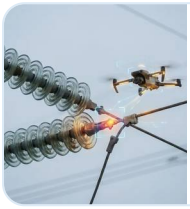
01 Forecasting sun and wind

AI forecasts solar and wind output for every quarter-hour. Next: forecasts per street and per minute, linked directly to the grid.



02 More power through the same grid

Lines and substations can often carry more than their rating says. AI finds that headroom in a full grid, without waiting for new cables.



03 Predicting faults on the grid

Drones and sensors inspect lines, cables and transformers. AI spots where a fault is brewing.



04 Agents for connections and customers

IN PILOTS

Agents help with connection queries and fault reports. Soon the customer's agent will deal directly with the grid operator's agent.



05 Managing water smartly

Sensors and AI help find leaks, run treatment processes and monitor water quality when water is reused.



06 Data centres and power demand

Data centres need more and more power. AI helps shift that demand, and tech firms already buy power from small reactors yet to be built.



07 The virtual power plant

Thousands of panels, batteries, charging points and heat pumps, steered by AI as if they were one power plant.



08 The grid's digital twin

In a digital twin, AI tests thousands of grid scenarios and fills in missing data, to plan expansion, handle faults and assess new connections.

COMING NEXT The future of energy and utilities

Where energy and water could be in five to fifteen years, with AI as the engine.



09 The grid that runs itself

FUTURE SCENARIO

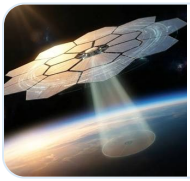
Around 2040, AI could run the grid second by second: rerouting flows, sharing capacity and restoring supply. People set the goals.



10 A reactor beside the data centre

FUTURE SCENARIO

Tech firms are buying power now from reactors yet to be built. Around 2040, a data campus could have its own nuclear plant.



11 Solar power from space

FUTURE SCENARIO

Solar power stations in orbit that beam power to the ground, even at night. In 2023 a test satellite showed the principle works.



12 A supergrid between continents

FUTURE SCENARIO

Cables thousands of kilometres long and energy islands at sea. Around 2040, Europe's evening peak could run on afternoon sun from elsewhere.



13 Summer sun for winter

FUTURE SCENARIO

Iron-air batteries that deliver for a hundred hours, hydrogen in salt caverns. Around 2040, AI helps store summer sun for January.



14 Heat from deep underground

FUTURE SCENARIO

New drilling brings geothermal heat within reach where drilling was too costly. Around 2040, it could supply power and heat in far more places.



15 Water from air and sea

FUTURE SCENARIO

Around 2040, buildings could draw their own drinking water from dry air. AI links such sources with desalination and reuse into one supply.

PEOPLE & ORGANISATION

The energy organisation of the future

What AI asks of roles, teams, leadership and culture at grid operators, energy companies and water companies.



16 The AI-first organisation

AI takes over forecasting, planning and searching inspection images. Field engineers and grid planners focus on work where their judgement counts.



17 New roles in energy

Supervisors of a grid that runs itself, trainers of AI models, operators of inspection robots and drones.



18 People and AI in the control room

AI filters thousands of alerts and proposes switching actions. The operator assesses the proposals and decides what is carried out.



19 Leading the energy transition

Leaders in energy and water give direction to change. By taking the initiative, they bring people together to build tomorrow's energy system.



20 The future academy

Rather than wait for the education system, staff in a future academy practise with AI and new technology using faults from their own grid.



21 Into the future as an ecosystem

Plan together and you get further. With start-ups, scientists, partners and governments, across borders too, a new idea becomes reality sooner.

THE OTHER SIDE

The other side: responsibility and risk

Data, reliability and crime: what is at stake when AI helps steer energy and water.



22 Data as the foundation

AI only works when data from every part of the organisation is available, reliable and connected: the foundation for AI across an energy company.



23 Grid reliability

Run a large power grid with AI and you can affect millions of people. A model error can spread faster than an operator can step in.



24 Energy crime

AI makes it easier for criminals to get into grids and water companies: through ransomware, system hacks and phishing with cloned voices.

DURATION
30, 45, 60 minutes or longer, with time for questions

LANGUAGE
Dutch or English

FORMAT
On location or online

FEE
On request

PLUS

"Richard succeeded excellently in waking up our leaders and setting them on the path to the future: after the lecture, discussions took place across various parts of the organisation about the topics covered, and initiatives have been set in motion."

Aart van Haren Managing director, PLUS

Deloitte.

"A dazzling journey through new technology. The enthusiasm and energy during his presentation, combined with the visuals, provided a successful kick-off to our event."

Patrick Steemers Partner, Deloitte

Interested in a keynote on energy and utilities?

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