

Hitachi Energy Investor Days 2023

Pioneering Sustainable Offerings



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Hitachi Energy



Hitachi Energy –
Advancing a sustainable
energy future for all





01

Carbon-neutral (CO₂e) in own operations

02

50% reduction in carbon dioxide equivalent emissions along the value chain

Our actions

- “ Energy efficiency programs
- “ Fossil-free electricity
- “ Fossil-free operations and fleet
- “ Eco-efficient portfolio; minimize SF₆ usage and leaks
- “ Accelerate reduction, starting with 2021 actions

We accelerate the energy transition through innovative technologies

We aim for carbon neutrality in our own operations and reduce our emissions along the value chain – to support limiting global warming to 1.5 degrees

We will mitigate business risks related to climate change

Our pioneering sustainable offerings deliver total life cycle optimization

Products

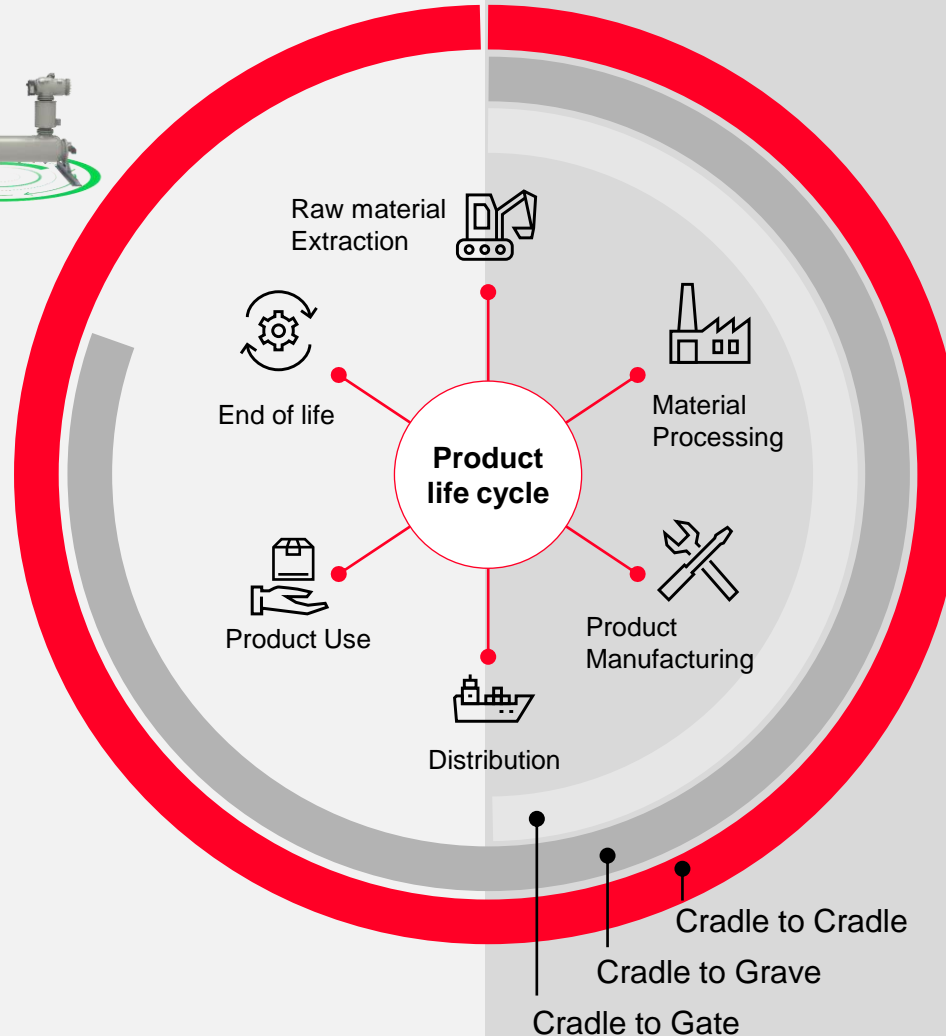
The world's first eco-efficient 420kV circuit breaker



Transformers with enhanced energy efficiency and biodegradable fluids



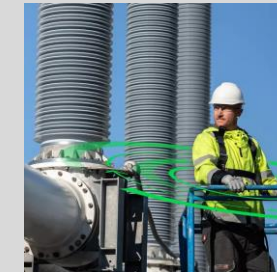
HVDC¹ connection with sustainability-optimized design



Services



Consulting services

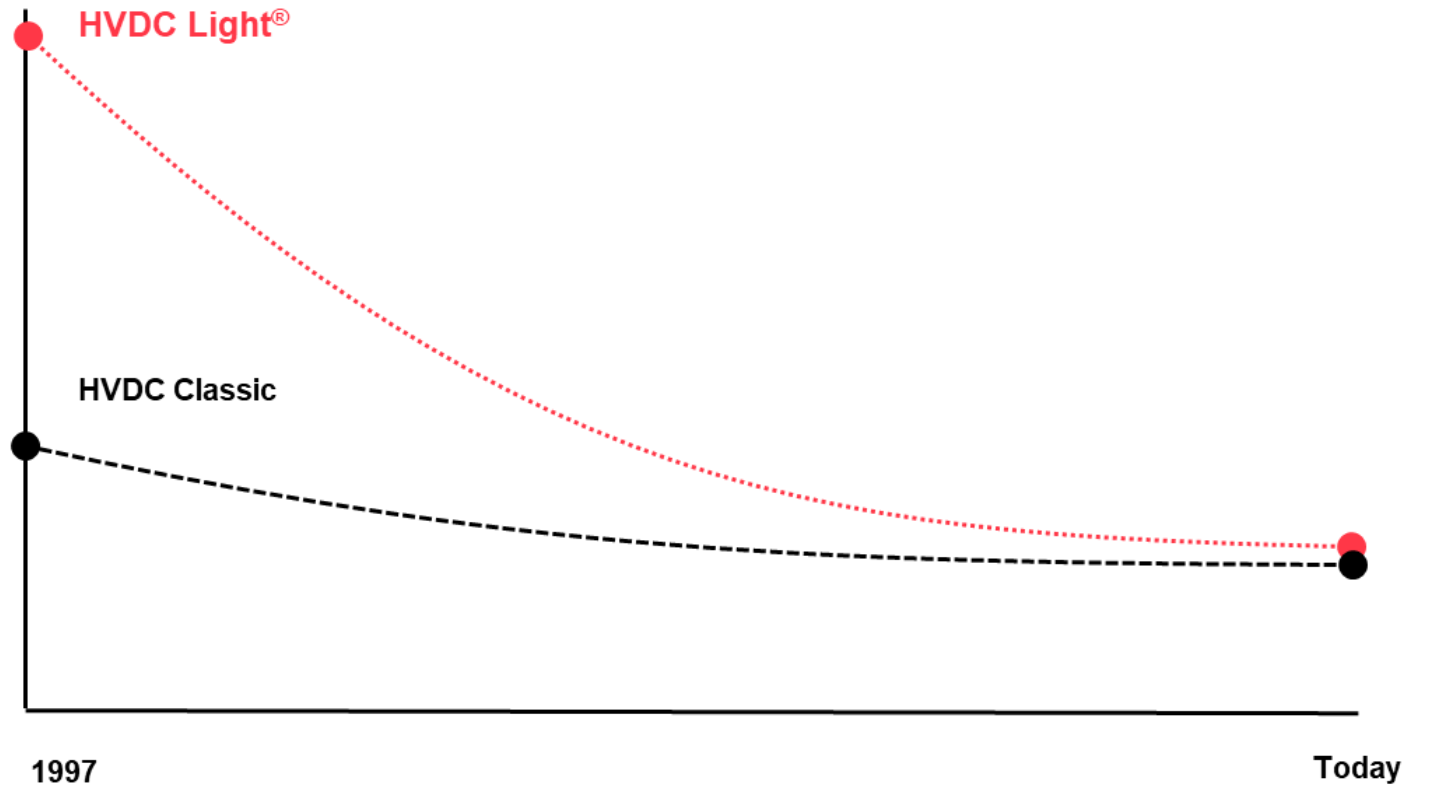


EconIQTM retrofill services



Digital solutions & services

Lower losses: more of the power generated reaches the consumer



Efficient, flexible, and interconnected grids are essential for integrating renewables across large regions.

Products & Services: EconiQ™ – our promise towards a carbon-neutral future

“

The EconiQ portfolio is Hitachi Energy's response to the need to reduce carbon emissions while ensuring the power grid stays **safe and reliable**.



Reduced environmental impact

Boosting sustainability with eco-efficient solutions

Energy and resource efficiency

Cutting costs, lowering environmental risks, and improving safety

Future-proofing life cycle investments

Technologies for current and future energy demands



EconIQ is critical to overcome greenhouse gas emissions in high-voltage equipment

Challenge: SF₆ has been the standard in switchgear, but is a potent greenhouse gas with GWP¹ of ~25,000

Solution: Hitachi Energy leads the way with groundbreaking eco-efficient solutions

- ✓ 10+ years of R&D and concerted investment into SF₆-free technology
- ✓ Compact and scalable solution

SF₆ leakage occurs in substations, a critical part of high-voltage electric system facilities

Air-insulated substation with Live Tank Breaker



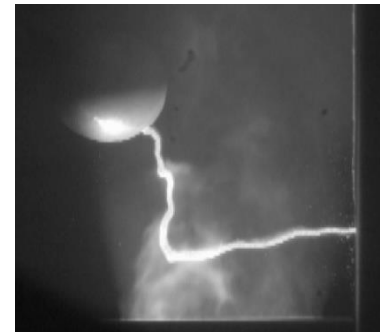
Gas-insulated substation



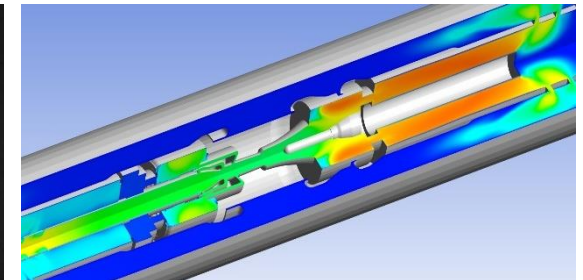
EconIQ journey for SF₆-free technology



High Voltage and High Power Testing



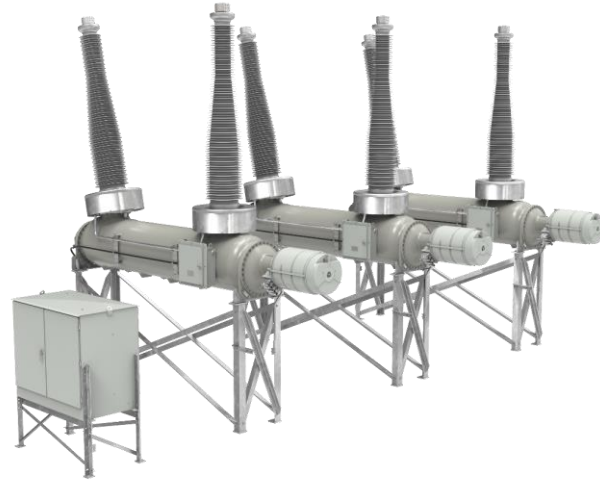
Fundamental Investigation



Development Tools & CFD

EconIQ™

Delivered the **world's first SF₆-free 420 kV Dead Tank Breaker** and will soon deliver the **first SF₆-free 420kV GIS**



Eversource

Hitachi Energy delivered the EconIQ™ 420 kV DTB at an Eversource 345 kV substation.



TenneT

Hitachi Energy will deliver the world-first 420 kV SF₆ free GIS, supporting the leading European grid operator to achieve its carbon neutrality goals.

We offer pioneering solutions that deliver value to customers and partners

Our solutions offer the lowest carbon footprint throughout the entire life cycle



Performance and reliability

Energy and resource efficiency

Future-proof technology to meet evolving regulatory environment



Increased carbon taxes

Carbon neutrality targets

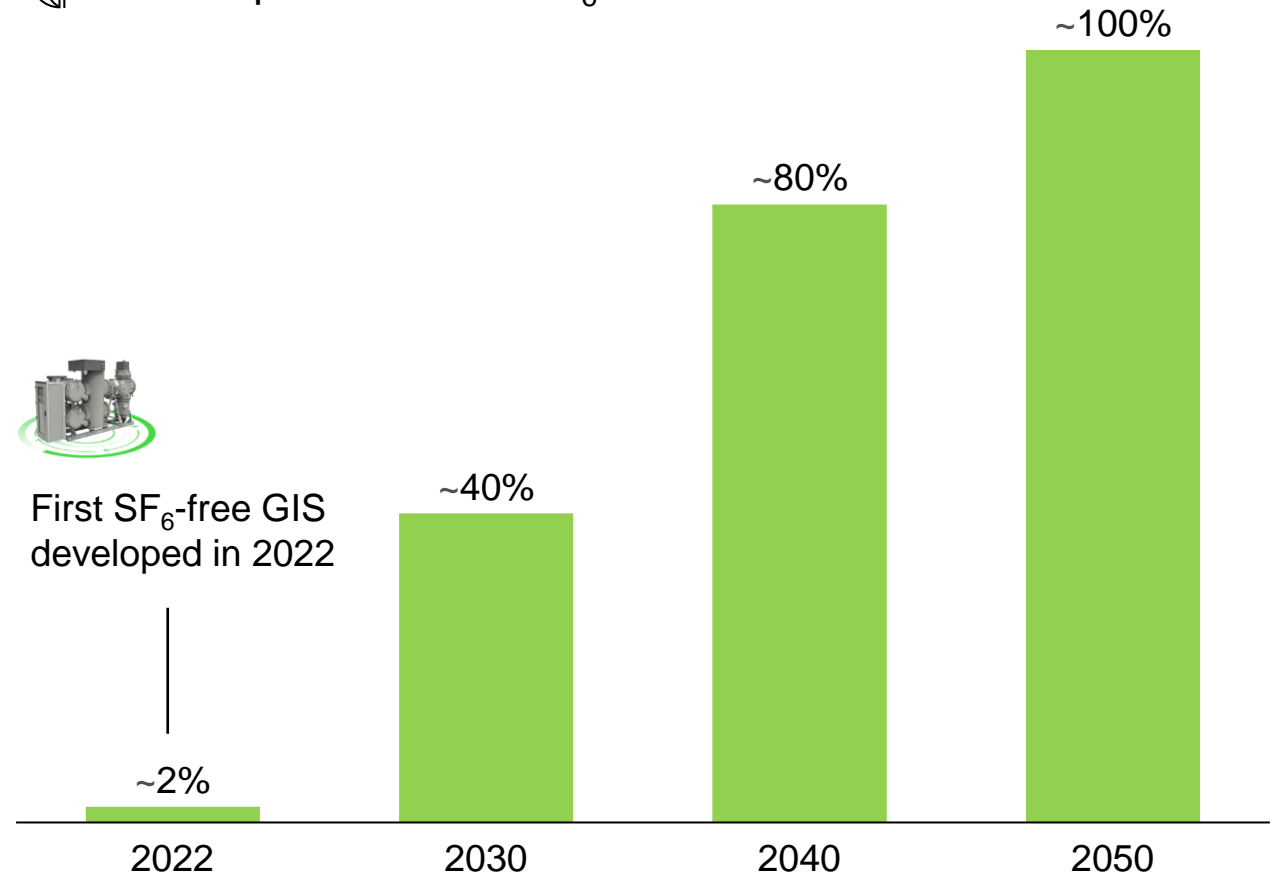
New legislation

We have transformed the competitive landscape by shaping an SF₆-free future

Illustrative projections



Global penetration of SF₆-free GIS



First SF₆-free GIS developed in 2022



Feda, Andorra

Co-creating sustainable transformer solutions, powering Andorra's sustainable energy future

Co-created EconIQ transformers:

- **Low losses:** Energy efficiency and reduced carbon footprint
- **Ester fluid:** Biodegradable, low flammability
- **Very low noise**

E.ON, Sweden

Circularity to reduce carbon footprint

Use of recycled oil in distribution transformers

90% Lower carbon footprint of the recycled oil compared to new mineral oil

18% Increase of total recycled content of the transformer



Innovative EconIQ retrofill services for existing high-voltage equipment

- 01** Replacement of SF₆ from existing equipment
- 02** Accelerate wide-scale decarbonization
- 03** Deliver environmental and life-cycle performance



We continue to innovate with services and solutions to support sustainability throughout life cycle

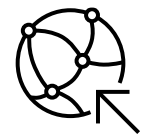
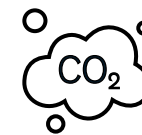
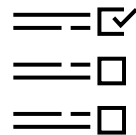


Emissions Tracker

Comprehensive end-to-end emissions tracking and management



Ranked #1 in 35 categories



End-to-End Support

Inventory Management

Compliance Reporting

Carbon Accounting

Comprehensive Coverage

**Hitachi Energy
integrates
sustainability
throughout the
value chain**

Key takeaways

- 01** Hitachi Energy has a rich history of delivering sustainable products and services
- 02** Our sustainable solutions provide comprehensive life cycle optimization
- 03** EconiQ represents our commitment to eco-efficient products and solutions that benefit society; we are leading the world towards an SF₆-free future
- 04** Our eco-efficient portfolio is cutting-edge and offers substantial value to customers and partners



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Inspire the Next 