Company Profile – Hydropower Evolutions GmbH

Landshut | June 2022

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3 **Hydropower Evolutions** | Your partner of choice

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5 **Distinct Expertise** | Matching our customers' needs

6 **Case in Point** | Pilot project Hasang

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Hydropower
Evolutions

At the dawn of the post-crisis era, investors worldwide are increasingly looking for infrastructure investments

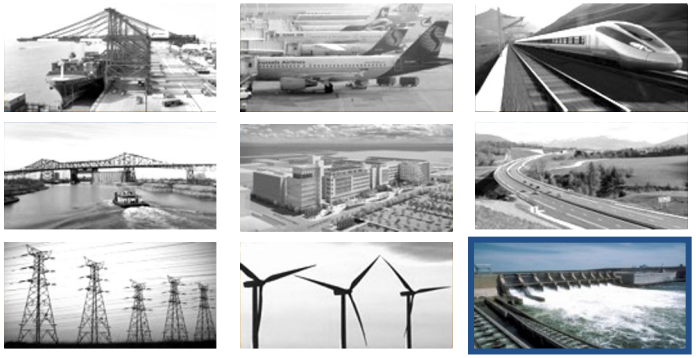
Capital is available

Following a period of a crisis-born **cash drain**, 170,000 bnEUR of free **capital** with both private and institutional investors will be **searching for profitable investments** in the years to come.

But: Markets are volatile

Nowadays, **classical asset classes** such as "**equity**" or "**fixed income**" either carry **high risks** and/or deliver **low returns**.

Trend: Infrastructure investments



By contrast, **asset-backed investments in long-lived, high-value physical infrastructure assets** that are difficult to substitute, provide average but **secure returns through steady cash-flows** – "**real assets**" are therefore a must-have for diversifying investment strategies.

Among infrastructure investments, **hydropower** is an **established and profitable long-term investment** opportunity **for strategic investors**

Uniper – a strong energy company with the right assets, knowledge and skills

Uniper has a deep understanding of global and regional energy markets, regulatory regimes, and market designs. We have a wide range of capabilities in the construction, management, and operation of large-scale energy assets as well as the optimization and risk management of assets and contracts. And we have long-standing relationships with industrial customers, municipal utilities, system operators, and our suppliers. These strengths and networks reinforce one another. There are three main areas in which Uniper deploys their strengths:

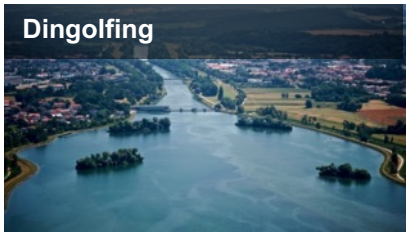
1. We help ensure security of supply in Europe as it transitions to a low-carbon future
2. Our trading activities connect global commodity markets
3. **We support the development of power markets outside Europe with our own generation activities and our services for third parties,** e.g. through **Hydropower Evolutions**, proud member of the Uniper Group

Uniper's portfolio combines large-scale power generation and the effective management of global and regional energy supply chains.

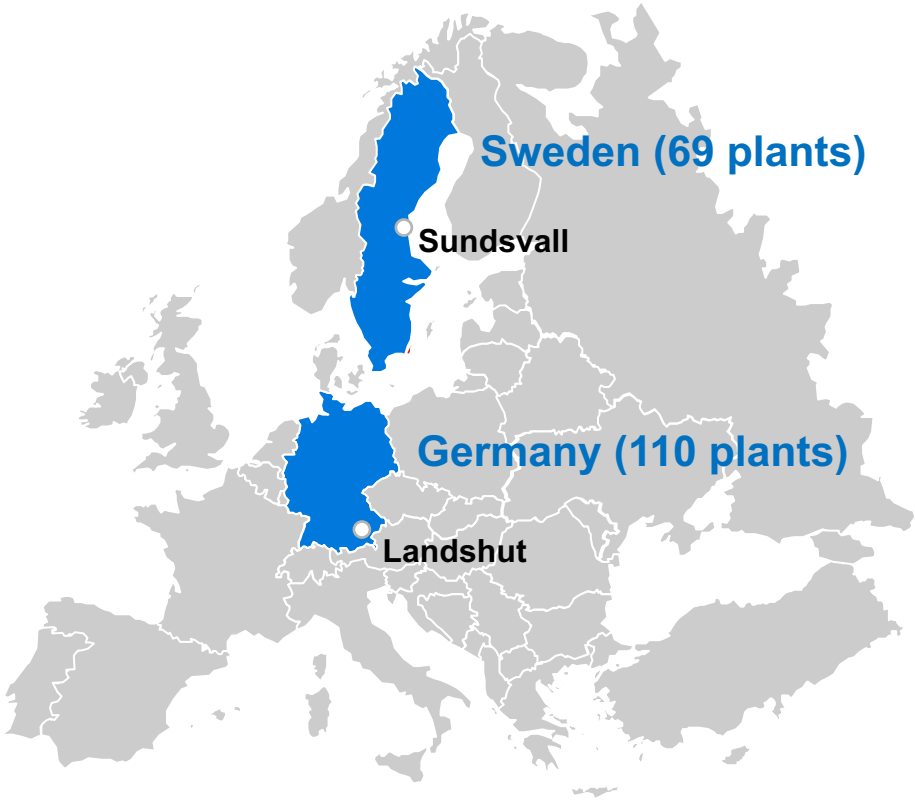
Uniper is an experienced and leading operator of hydro plants totaling more than 5 GW in Sweden and Germany

Uniper Generation Assets

Hydro	CCGT	Steam	Nuclear



Selected examples



Hydropower Evolutions is a professional advisory, developer and asset manager in the field hydropower

Uniper is a reliable partner for developing energy markets in the field of hydropower through its subsidiary Hydropower Evolutions GmbH – a new brand to deploy our unique expertise, which...

Hydropower Evolutions

… embraces and utilizes Unipers' long-term investor know-how

… takes investor's risk and focus on value creation in every project

… ensures compliance with international sustainability principles and standards

… contributes comprehensive technical expertise and broad industry network

… in order to maximize partner's and client's project success and asset value

Infrastructure investors scanning the market for cash-flow generating hydropower plants face three challenges

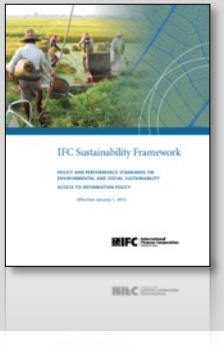
First challenge:

Safeguard engineering quality and international ESG requirements

Intl. technical engineering standards and expertise

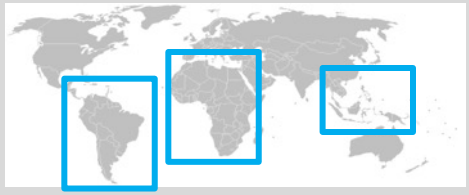
IFC Performance Standards

DIN



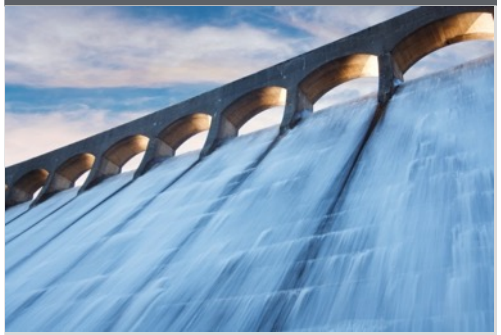
Second challenge:

Access to hydro investment opportunities in key markets



Third challenge:

Manage asset portfolio from a technical point of view

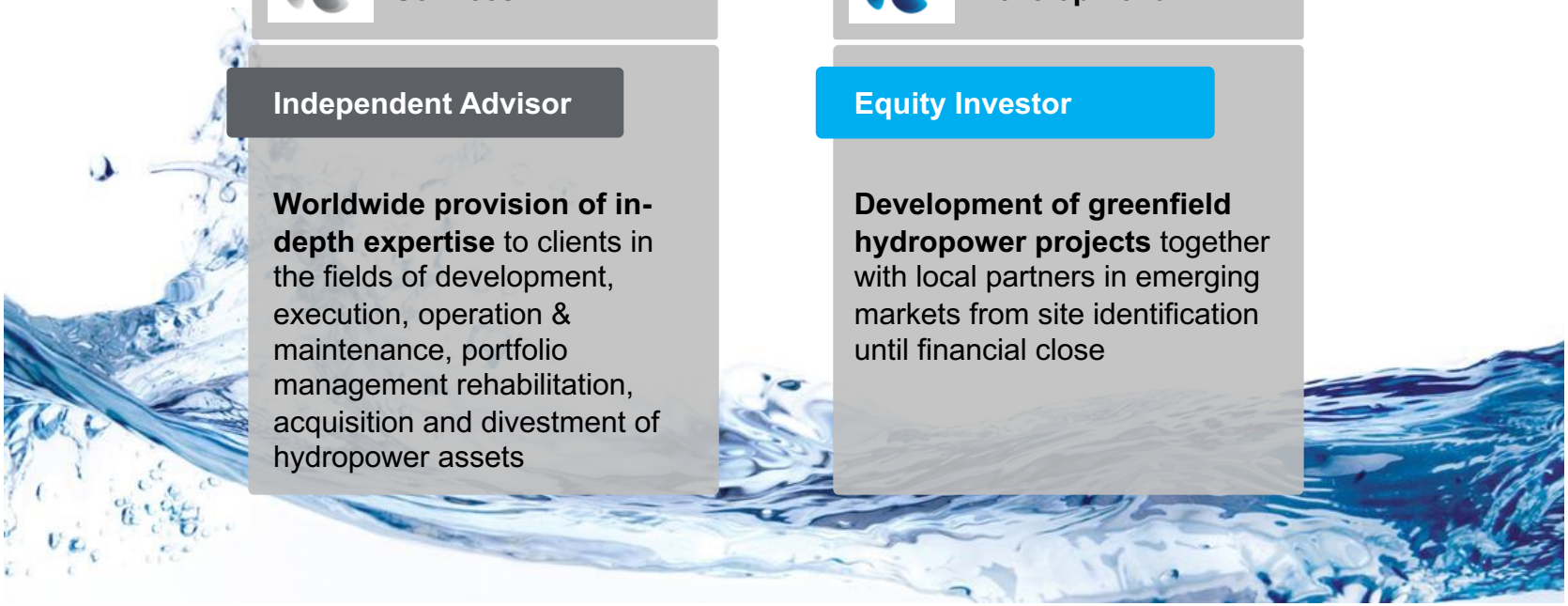


- Asset planning and budgeting
- Risk mgmt. and O&M strategy
- Performance management
- Operational Excellence

ESG = Environment, Social, Governance

Hydropower Evolutions: a reliable partner in reducing risks and creating significant values in hydro investments

Business areas of Hydropower Evolutions addressing key challenges:



Advisory Services

Independent Advisor

Worldwide provision of in-depth expertise to clients in the fields of development, execution, operation & maintenance, portfolio management rehabilitation, acquisition and divestment of hydropower assets

Project Development

Equity Investor

Development of greenfield hydropower projects together with local partners in emerging markets from site identification until financial close

Advisory Services enable us to build trustful relationships and turn existing Clients into future Joint Venture Partners

Hydropower Evolutions

Advisory Services

Project Development

Hydropower Evolutions:

Project Steering, Management & Engineering (development, execution, rehabilitation)

Due Diligence (acquisitions & divestments)

Client:

Data Provision & Local Stakeholder Management

Key principles

Long-term investor know-how

Value-driven approach based on long-term experience in buying and selling of hydropower assets

Technical, financial, and sustainability **due diligences**, **analyses**, and **sales pitch**

In-depth engineering expertise

120 years of experience in developing, constructing and operating hydropower plants captured in **state-of-the-art tools, methodologies and management systems** developed in-house

Extensive industry networks

Access to key **engineering firms**, intl. top-tier **equipment suppliers**, leading **academic professionals**, as well as a wide range of strategic and institutional **investors**

Joint Ventures form the core of our business model – profitable and sustainably developed hydropower projects

Hydropower Evolutions

Advisory Services

Project Development

Hydropower Evolutions:

Project Steering

Technical and Commercial Project Development

Sustainability Performance Management

Partner:

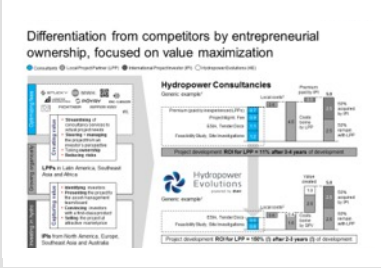
Local Stakeholder Mgmt.
(incl. SPV, permits, land, PPA)

Key principles

Closing a market gap in emerging markets

Hydropower Evolutions addresses a **market demand for reliable renewable energy power plants** delivering on their promises and exploiting the **great natural potential in emerging markets**

Entrepreneurial ownership, focus on value maximization



Professional and fast joint developments of profitable and sustainable green-field **hydro projects complying with intl. standards** together with local partners in emerging markets

Pilot project outperformed business case assumptions

Internationally bankable run-of-river **development** in Sumatra, Indonesia, **achieved significant returns** for project owners during partial sale to a multinational business conglomerate in 2012

SPV = Special Purpose Vehicle, PPA = Power Purchasing Agreement

Unique value creation for our project partners and investors through a great variety of products and solutions

Range of services, tools, analyses, and concepts

Integr. Project Mgmt.	Technical Trainings	Stake-holder Mgmt.	Site Visits
Potential Study	Project Screen.	Pre-Feasibility Study	Feasibility Study
Plant Design	Financial Modeling	Hydraulic Modeling	ESIA
Visuali-zations	Sustain-ability Assess.	Autho-rization & Licensing	Tender Design
Tender Docs	Supplier Mgmt.	Contract Mgmt.	Risk & Claim Mgmt.
Operation Concept	O&M Strategy	Dam Safety	Project Prioriti-zation
Portfolio Analysis	Asset Mgmt.	PSP Evalu-ation	Academic Support

Value Proposition

Investor expertise, operational competence, performance orientation, financial benefit

Professional and fast development of profitable green-field **hydropower projects**, together with a partner in emerging markets, **ready to be constructed/operated**, **and offered to international investors** for a lower price compared to their in-house costs for the same development, **along with advisory services** upon demand.

Selected references between 2007-2017

Hydropower Evolutions closes a market gap between local hydro developers and international investors

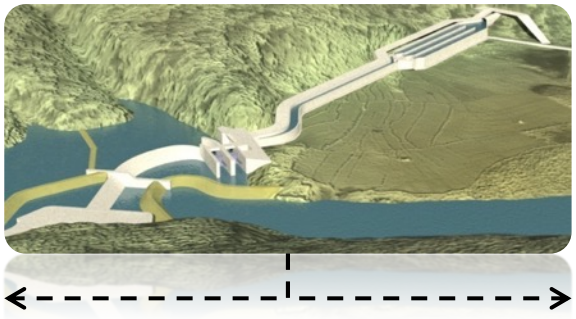
Local Project Partners

… have **limited bargaining power** over suppliers, risk **budget and time overruns**, and suffer from **mediocre hydro developments.**

Together with us, however, they…

- **Spend less** for project development
- **Shorten development cycle**
- **Reduce risks**
- **Achieve** a **high-quality result**
- **Benefit from value creation**
- Get **access to (co-)investors**
- Keep option **to acquire our project share** after development phase

Partnerships based on trust and commitment



Benefits for partners/investors

International Investors

… face **difficulties identifying sustainably developed, profitable projects managed by** hydropower **professionals** in emerging markets.

Together with us, however, they…

- Gain **access to well-developed hydropower projects**
- Deal with **capable and experienced management team**
- Establish **long-term relationship** within the hydropower industry

We invite you to contact us!

Hydropower Evolutions

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Backup
Project References

Hydropower Evolutions

Project Description

PT. PLN (Persero)
42 Months [2018-2021] - ongoing

The Government of Germany supports the Government of Indonesia in strengthening the power sector, emphasizing on renewable energy, through cooperation between KfW and PLN. In this context, HE shares their hydropower competence and best practices to drive growth in the hydropower sector and thereby support the delivery of the Paris Agreement and UN Sustainable Development Goals.

Accompanying Measures in PLN's Sustainable Hydropower Program

Indonesia

Services provided by HE

HE, on behalf of Uniper Kraftwerke GmbH, leads the consortium of four international and national consulting and engineering companies and provides the project's international team leader.
The objective of the project is to achieve improved capacity of PLN in strategic and sustainable development and implementation of hydropower projects.
20 experts are assigned to provide a total learning & training input of 90 person months.

Deliverables

- Analysis of training needs and organization
- Theoretical training and coaching, development of courses and training of trainers
- Practical Training (on-the-job) and support during independent work phases

Value created

The project aims at sustainable results through needs-orientated capacity building and intense cooperation, with the overall perspective to increase the number of new hydropower projects to be developed by PLN in the future.

If you would like learn more about our projects, please contact us and we will connect you with our project managers.

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Hydropower Evolutions

Project Description

PT. Titan Multi Power
2010-12

From 2010 to 2012, PT. Titan Multi Power (TMP) and HE's team (on behalf of E.ON) successfully developed the 42 MW Hasang Hydropower Plant on Kualu River in North Sumatra, Indonesia. Based on the results of the Feasibility Study (FS), the project is technically feasible, economically viable and environmentally and socially sustainable.

Technical Project Development | Hasang HPP

42 MW / 245 GWh/a

Indonesia

Services provided by HE

HE was responsible for the general project management, including project office management, technical and commercial project development, pre-feasibility study, feasibility study, environmental and social impact assessment, environmental and social management and monitoring plan, sustainability report, risk register, EPC contract tender documents, sustainability performance management, technical management of all third party service providers and suppliers required for the completion of the development phase, as well as supporting TMP in local management.

Deliverables

- Pre-Feasibility Study
- Feasibility Study, ESIA and EPC Tender Documents
- Risk Workshop incl. Risk Register
- Sustainability Workshop

Value created

Approx. 5 mUSD along with the provision of a solid, fact-based set of technical and sustainability studies allowing the project shareholders to (a) secure key permits and concession rights, (b) spark the interest of key investors and (c) successfully market the project to a third partner for the construction phase.

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Project Description

International Finance Corporation
9 months (2015)

IFC was approached by the Government of Indonesia to conduct a rapid assessment of hydro potential at PU Pera's existing dams. The aim was to identify projects with an estimated hydropower potential of >30 MW. As the result of an international tender HE, together with their Indonesian sub-contractor, was appointed to carry out this assessment.

Site Assessments | Hydropower Potential of 200+ Dams

Indonesia

Services provided by HE

- Extensive data research and evaluation (plausibility, quality, relevance).
- Development of screening methodology (determination of criteria, weighting for ranking, ranking approach in two phases)
- Formulation of final report including conclusions and recommendations

Deliverables

- Project Ranking Study
- Project Ranking Matrix containing more than 200 dams
- GHG Evaluation Report for final options
- High-level stakeholder presentation for Government of Indonesia

Value created

Although existing potentials at dams are already exploited to a large extent, the option for development of a PSP was identified and two initial design concepts were presented by HE. The project is currently pursued for further development by the client together with the national stakeholders.

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Project Description

PT. Titan Multi Power
6 months (2015)

The project was identified by HE's partner Titan Multi Power (TMP) in 2014. Upon positive results from initial site reconnaissance's, a pre-feasibility study was prepared in the first half of 2015 under HE's lead, revealing a very attractive 220 MW run-of-river hydropower project.

Pre-Feasibility Study | Romuku HPP

220 MW / 1,005 GWh/a

Indonesia

Services provided by HE

HE's scope included the sole responsibility for the complete study, including overall project management and coordination, contracting and supervision of third party service providers (local consultants, hydrological study), project concept and design, technical and economic analysis and optimization, initial environmental and social impact assessment.

Deliverables

- Review Potential Study and Existing Documents
- Initial Site Assessment and Report
- Pre-Feasibility Report
- Recommendation to Investors

Value created

The Pre-Feasibility Study, comprehensively reflecting technical, environmental and social risks and opportunities, enabled the investors to make a fact-based decision to pursue the development of the Romuku hydropower project.

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Hydropower Evolutions

Project Description

PT. Titan Multi Power
6 months (2010)

On behalf of PT. Titan Multi Power (TMP), HE's team (on behalf of E.ON) carried out a comprehensive review on feasibility level of the hydropower opportunity "Lau Gunung".

Pre-Feasibility Study | Lau Gunung HPP

14 MW / 108 GWh/a

Indonesia

Services provided by HE

Review and update of existing project information based on available local studies and in-depth analyses of seismic and geological conditions, hydraulic optimization and plant layout.

Deliverables

- Review Report of Existing Documents
- Site Investigations
- Topographic and Hydrometric Surveys and Reports
- Pre-Feasibility Report (revision of previous version)
- Recommendation to Investors

Value created

Both present and future investors of the projects were provided with a comprehensive risks and opportunities evaluation, in particular concerning seismicity. Based on the analytical work and conclusions, the investment proposal was substantiated significantly and eventually led to a very clear decision by the investors.

If you would like learn more about our projects, please contact us and we will connect you with our project managers.

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Hydropower Evolutions

Project Description

E.ON SE
2010-2015

As part of the “Outside Europe Strategy” HE’s team (on behalf of E.ON) carried out several initial site assessment in the focus countries Brazil, India and Turkey.

Site Assessments | Various Locations

Brazil, India and Turkey

Services provided by HE

- Examination of the physical project environment incl. site access, grid connection, topography, geology, seismicity, sedimentation, and hydrology
- Assessment of technical parameters, basis of design, plant layout, and construction design
- In-depth hydraulic modeling, review of generation volumes, and analysis of upstream and downstream developments
- Plausibility checks of authorization & licensing, CAPEX, OPEX, and project scheduling
- Input regarding O&M strategy, dam safety, sustainability performance, operation & engineering concept, construction programs & impounding
- Evaluation of project risks and opportunities incl. environmental issues, social impacts, and the political project environment
- Participation in site visits and expert sessions
- Visualization of findings and recommendations
- Risk evaluations
- Energy economic models

If you would like learn more about our projects, please contact us and we will connect you with our project managers.

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Hydropower Evolutions

Project Description

E.ON International Markets
6 months (2012)

As part of the "Outside Europe Strategy" and in the context of an asset swap with Verbund, HE's team (on behalf of E.ON) carried out a commercial, technical, environmental and social due diligence of 19 hydropower plants with a total installed capacity of 2.2 GW.

Due Diligence | EnerjiSA Hydropower Portfolio

2,250 MW / 6,300 GWh/a

Turkey

Services provided by HE

- Examination of the physical project environment incl. site access, grid connection, topography, geology, seismicity, sedimentation, and hydrology
- Assessment of technical parameters, basis of design, plant layout, and construction design
- In-depth hydraulic modeling, review of generation volumes, and analysis of upstream and downstream developments
- Plausibility checks of authorization & licensing, CAPEX, OPEX, and project scheduling
- Input regarding O&M strategy, dam safety, sustainability performance, operation & engineering concept, construction programs & impounding
- Evaluation of project risks and opportunities incl. environmental issues, social impacts, and the political project environment
- Participation in site visits and expert sessions
- Visualization of findings and recommendations

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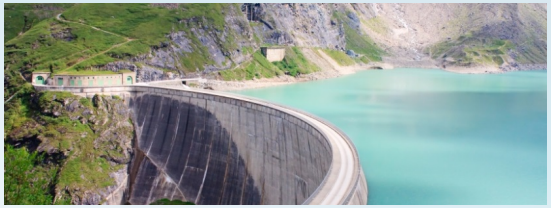
Hydropower Evolutions

Project Description

E.ON France
2010-15

The French Minister for Energy announced a tender process for the renewal of the French hydro concessions. 10 concessions totaling 5,244 MW were expected to be tendered between 2010 and 2015. E.ON France targeted the renewal of French Hydro Concessions as a promising growth option to be further developed.



Due Diligence | Hydro-power Concessions France

5,244 MW

France

Services provided by HE

Preparation Phase
- Support Energy Economics Modeling
- Drive Reserve Market Study (RWTH)
- Support Business Case Development
- Support Partnering + Special Purpose Vehicle (SPV)
- Support Lobbying
- Drive Technical Preparation
- Engage with Engineering Stakeholders
- Prepare for Technical and Environmental Prequalification (PQ) /Due Diligence (DD)

PQ + Tender Phase
- Support PQ Application
- Mandate Owners Engineer

Deliverables

- Pre-qualification report
- Preliminary design for value add options
- Energy economic model
- Draft tender documents

If you would like learn more about our projects, please contact us and we will connect you with our project managers.

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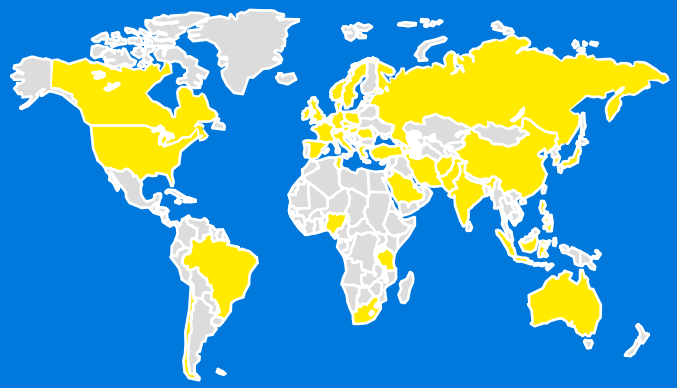
Backup
Uniper Kraftwerke GmbH

Sole shareholder of Hydropower Evolutions GmbH

Uniper at a glance

Our Business

Power generation
Energy trading
Energy storage
Energy sales
Energy services



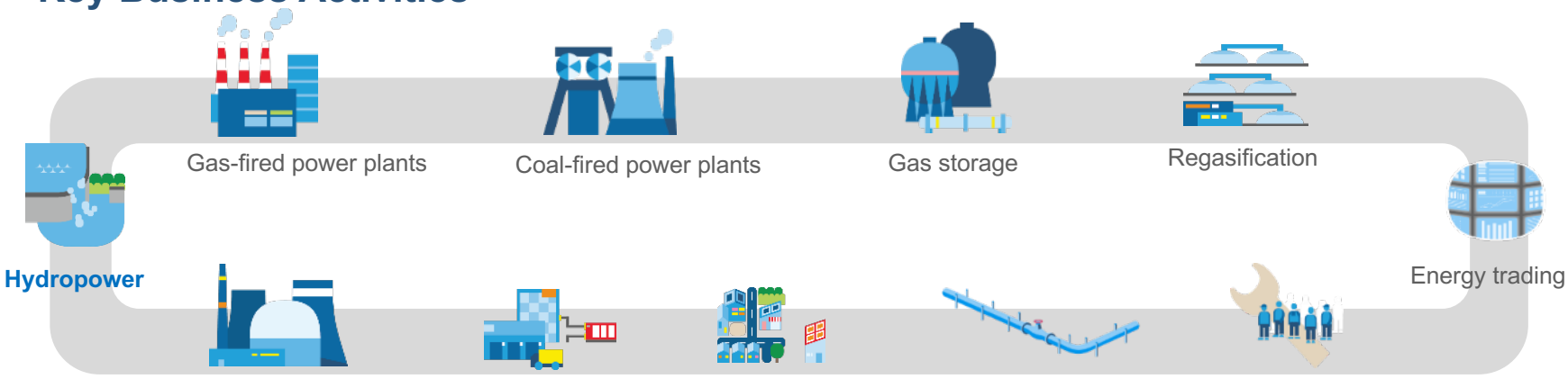
Active in over 40 countries

€1.5 bn.
EBITDA[1]

100 years'
experience

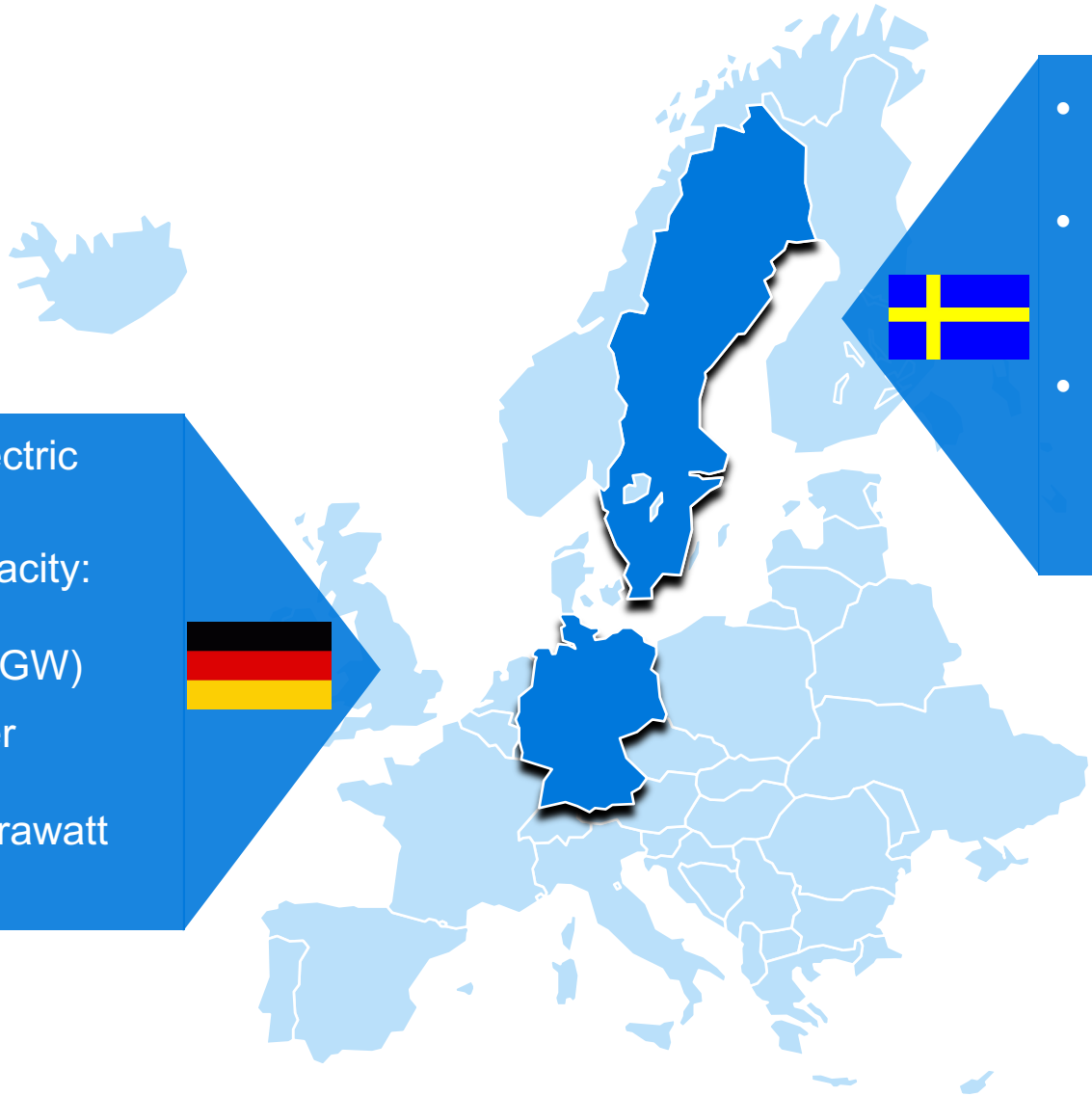
~34 GW
generation capacity [1]

Key Business Activities



1 as of December 2018; generation capacity excluding France due to sale during the year

Uniper Hydropower:
Active in Germany and Sweden



- 109 hydroelectric power plants
- Installed capacity: approx. 2 gigawatts (GW)
- Annual power generation: approx. 5 terrawatt hours (TWh)

- 77 hydroelectric power plants
- Installed capacity: approx. 1.7 gigawatts (GW)
- Annual power generation: approx. 7.8 terrawatt hours (TWh)

With a total installed capacity of 2 GW, Uniper is the largest operator of hydro power plants in Germany

PSW
5 pumped-storage plants;
4 additional plants

- 5 power plant groups
- 109 hydroelectric power plants
- 2 GW installed capacity
- 5 TWh annual power generation
- 1200 kilometers of river
- 400 employees (incl. apprentices)

Main
37 running-water power plants

Danube
13 running-water power plants

Management & Central Control Room in Landshut

Edersee

Main

Danube

Isar

Lech

- Running water
- Reservoir
- Pumped-storage
- reservoir
- Control room

Lech
22 running-water power plants, 1 reservoir

Isar
26 running-water power plants, 1 reservoir

uni per