

# XAYABURI RUN-OF-RIVER HPP



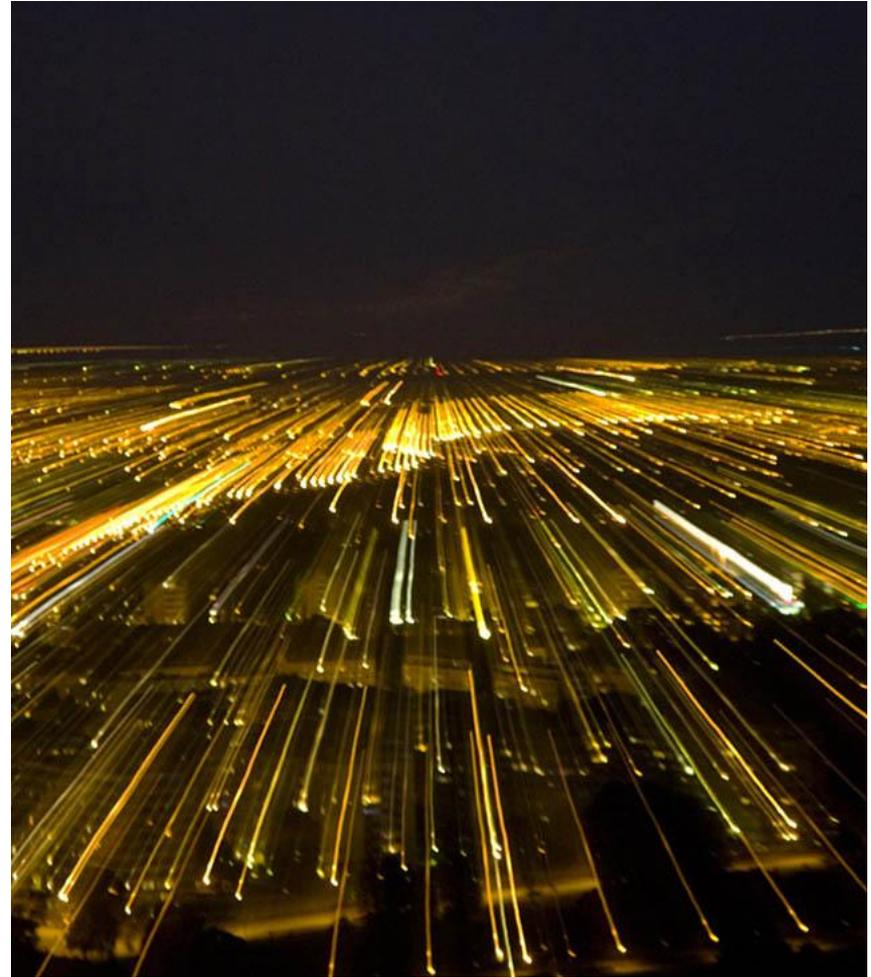
**PÖYRY REVIEW OF THE PROJECT**

17 December 2012

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# GLOBAL EXPERTS IN CONSULTING AND ENGINEERING

- Pöyry is a global consulting and engineering company dedicated to balanced sustainability
- 7000 experts in about 50 countries
- Project experience in more than 100 countries
- 10 000 projects annually
- Net sales in 2011 EUR 796 million
- Listed on the NASDAQ OMX Helsinki since 1997

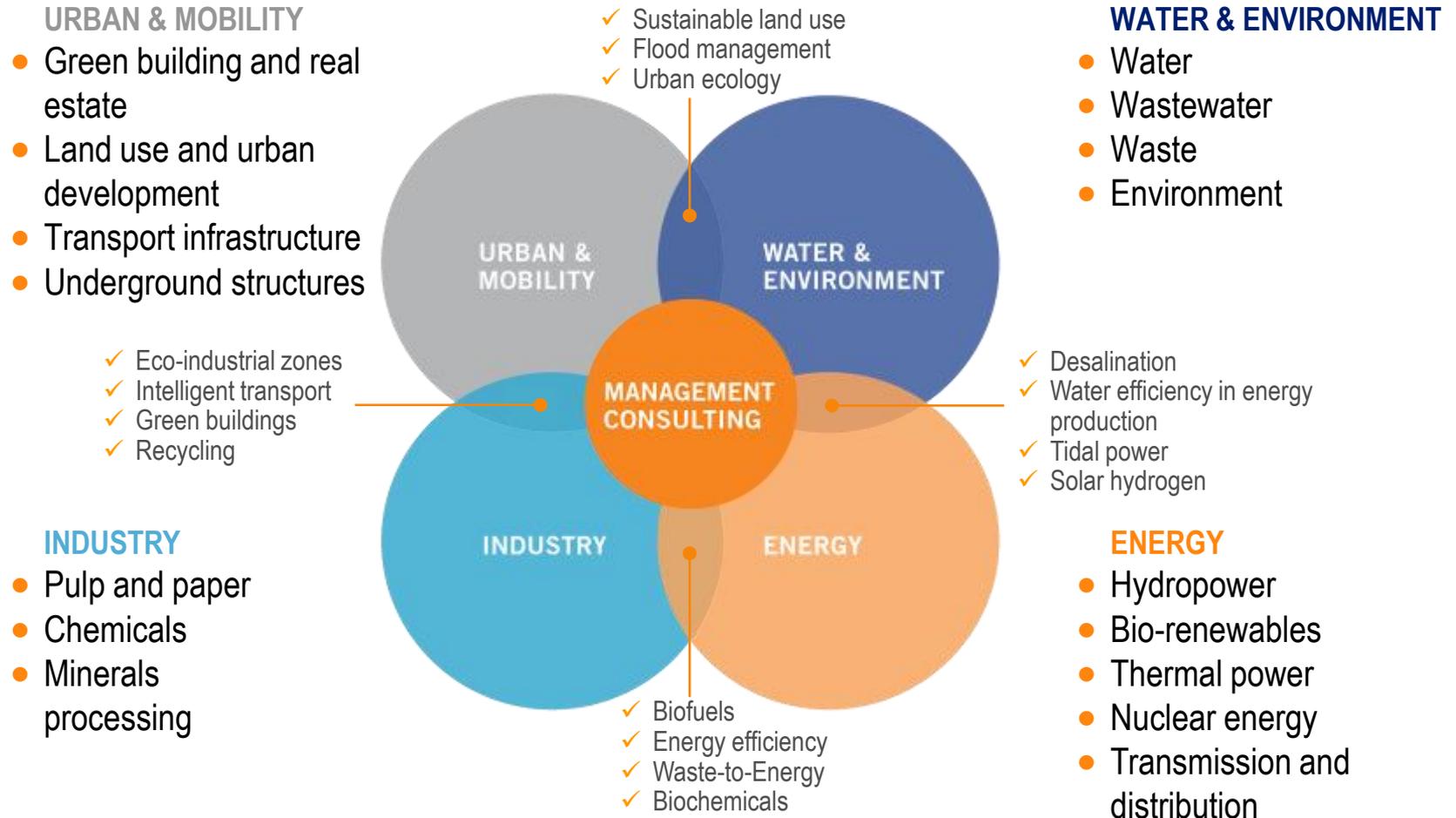


# OUR VISION

The global thought leader in engineering  
balanced sustainability for a complex world

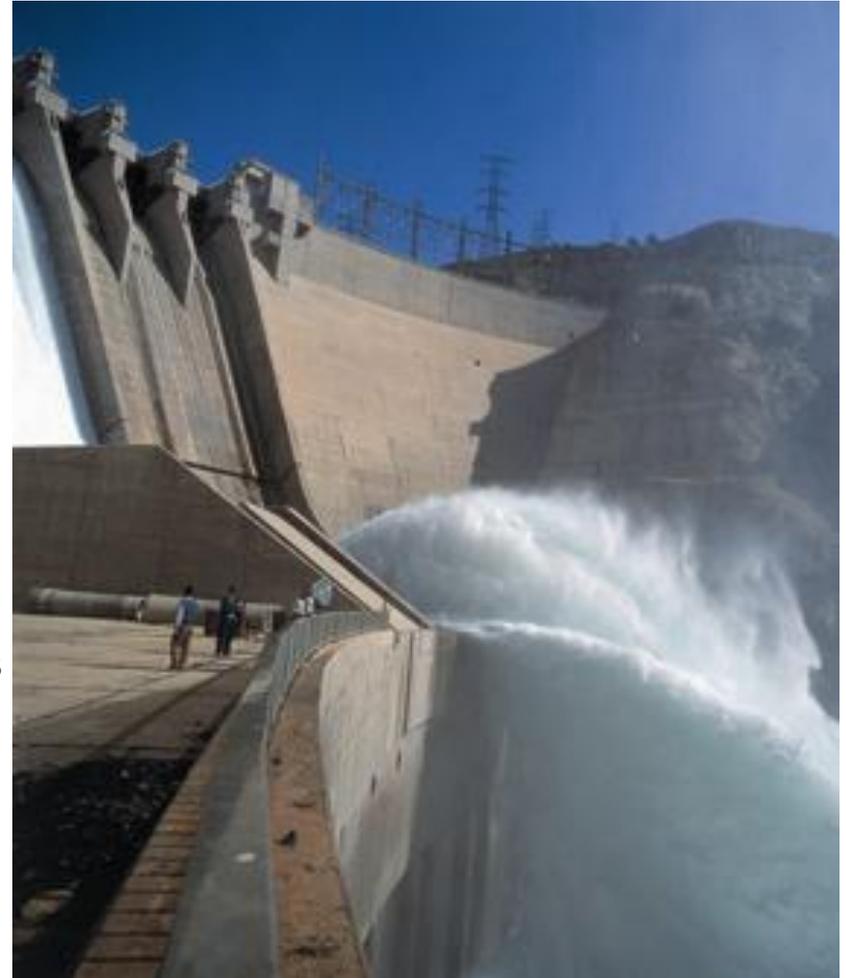
- Engineering has always been at the core of Pöyry
- For decades we have been involved in projects with sustainable dimensions
- The key difference now is that sustainability is placed at the heart of everything we do

# WIDE RANGE OF DEEP EXPERTISE HARNESSING SYNERGY POTENTIAL



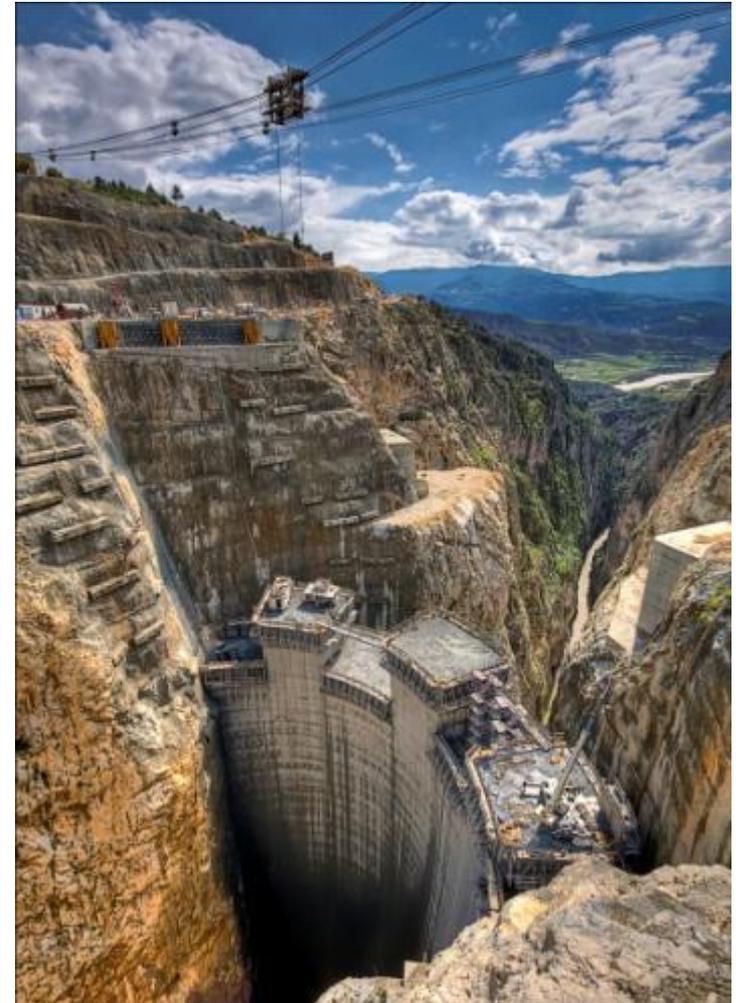
# PÖYRY'S HYDROPOWER EXPERTISE

- One of the world's leading engineering consulting firms in hydropower
- Strong position based on a wide spectrum of services and comprehensive international expertise accumulated from thousands of assignments over many decades
- Core areas
  - Reservoir storage schemes
  - Pumped storage schemes
  - Cascade schemes
  - Run-of-river schemes
  - Multipurpose schemes
  - Dam safety & environmental assessments
  - Technical & financial due diligence
  - River basin development & flood protection
  - Electro- & hydromechanics
  - Automation & control



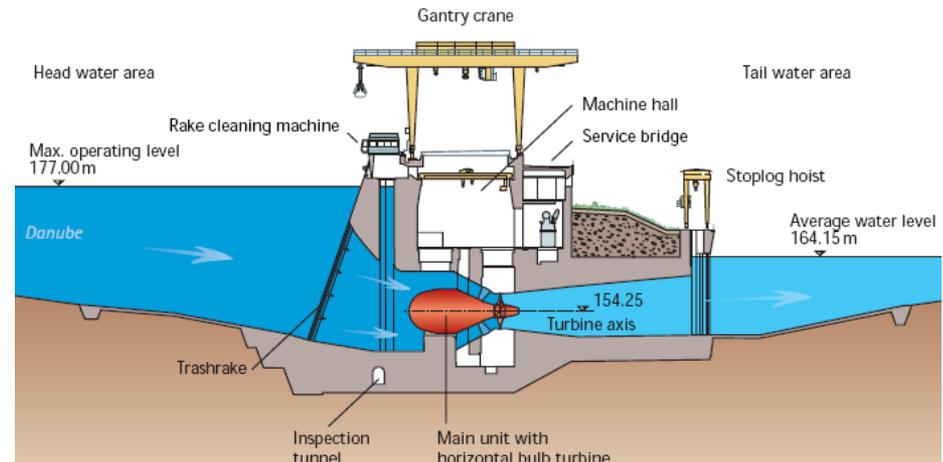
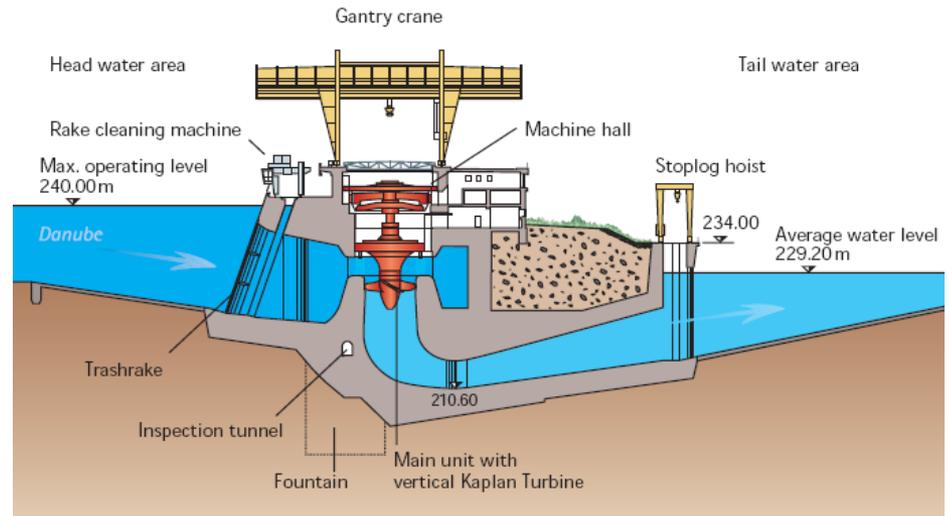
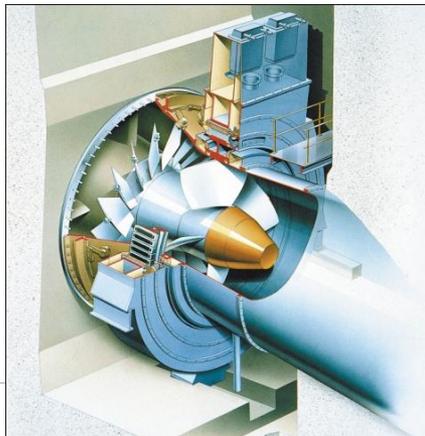
# MAJOR HYDROPOWER PROJECTS OF PÖYRY UNDER EXECUTION IN 2012

Current Projects	No. of MW
Laja I, Chile	35
Macchu Piccu II, Peru,	100
Quitaracsa, Peru	112
Angel 1-2-3, Peru	60
Reisseck II PSP, Austria	430
Lehen HPP, Austria	20
Ashta, Albania	90
Karlsdorf Gössendorf, Austria	20
Nant de Drance PSP, Switzerland	900
Deriner, Turkey	670
Ermenek, Turkey	300
Kavsak Bendi HPP, Turkey	180
Beyhan 1, Turkey	550
Tuirial, India	60
Uma Oya, Sri Lanka	150
Siah Bishe PSP, Iran	1000
Rudbar-Lorestan, Iran	450
Xayaburi, Lao PDR	1285
<b>Total capacity under construction</b>	<b>6412</b>



# A TYPICAL RUN-OF-RIVER HYDROPOWER SCHEME

- Run-of-river hydropower schemes are realized in the lower reach of a river course, where the slope of the river has become small but the mean flow is rather high
- The impounding height is usually between 5m to 35m, depending on topographical conditions
- The main characteristic of a run-of-river plant is that all incoming water passes the barrage immediately



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# XAYAPURI PROJECT KEY FEATURES

- Developer: Xayapuri Power Ltd, owned 78% by private Thai investors and 20 % by EdL and 5 % by a private Lao investor
- Feasibility Study and detailed design: ÅF-Colenco of Switzerland and Team of Thailand
- Installed Capacity 1285 MW in 7x175 MW and 1x60 MW Kaplan units
- Mean annual production is 7405 GWh or electricity for 4 million people
- The spillway will have 7 main gates and 4 low level outlets for sediment release.
- There will be navigation lock, different fish pass facilities and sediment flushing gates incorporated in the power plant.
- The entire investment cost will be about 3.8 Billion USD
- The scheme is privately owned and financed for a concession period of 30 years

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# SUSTAINABILITY ISSUES RELATED TO THE PROJECT

- The electricity produced for Lao PDR will replace old diesel engines in the provinces Xayaburi and Luang Prabang
- The electricity produced for Thailand will provide base-load energy otherwise provided by fossil fuel power plants, mainly lignite and gas
- The Xayaburi Power plant is the largest single investment in Lao PDR in one of the least developed provinces and will provide a significant economic impact to the country and the region
- The lifespan of a run-off river power plant is 100 years
- Xayaburi is a large scale infrastructure project in a valuable ecosystem and therefore special attention will be given to the social and environmental feasibility of the project
- The main issues are the migration of fish, the sediment & nutrient balances, impacts on aquatic ecosystems and socio-economic impacts
- It is the clear desire of all parties to mitigate adverse effects

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# PÖYRY'S INVOLVEMENT

- Pöyry's involvement in the project started after the completion of the Prior Consultation Process in April 2011.
- Pöyry was in May 2011 engaged by the Government of Laos (GOL) as a technical consultant to conduct a study on the compliance of the current technical design of the Xayaburi hydropower project with the Mekong River Committee guidelines.
- Pöyry's review was based on comprehensive technical analysis of the existing documentation prepared by other consultants, supported by our company's extensive experience in the field.
- Pöyry's services for the project have not included any additional feasibility study, planning, or environmental and social impact assessments – only a review of plans and documents prepared by others.

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# PÖYRY'S INVOLVEMENT

Scope of work was to report on whether

- Xayaburi Power Company (Owner) has complied with and satisfied the Mekong River Commission (MRC) Design Guidelines
- GOL and the Owner have taken into consideration the comments submitted by the MRC member countries during the Prior Consultation Process
- GOL and owner have complied with the terms of “Prior Consultation Project Review Report on Xayaburi Project”, dated 24 March 2011
- Issues relating to development, construction and implementation of Xayaburi or any discrepancies, conflicts and needs for changes arise in connection with comments given by the riparian countries

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# GENERAL CONCLUSIONS

- In its review Pöyry has
  - proposed significant technical improvements to the fish migration and sediment-passing structures and solutions
  - identified and suggested numerous studies, monitoring and modeling to improve the information basis for detailed construction design
  - identified and listed the concerns of the Mekong River Commission Member countries and suggested solutions and mitigation measures for them.
- Mekong River Commission has reviewed Pöyry's report in November 2011 and supports Pöyry's recommendations, but highlights issues, which it recommends to be investigated more or with different timing.
- It is important to note that Pöyry is not a decision-maker in this project, neither does it promote or oppose the project – we have been producing the needed additional information for the client as an independent consultant.

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# OVERVIEW OF PÖYRY'S REPLY TO THE COMPLAINT

- The complaint is based on:
  1. a wrongful understanding of the procedures agreed in the Mekong Agreement; and
  2. a wrongful understanding of how the recommendations given in the OECD Guidelines for Multinational Enterprises (“Guidelines”) apply to service providers such as Pöyry.
- A large part of the allegations made by the complainants are based on a scientific disagreement on mitigation measures proposed by Pöyry in its report. The complainants are entitled to a differing scientific opinion, but that does not mean that Pöyry would have breached the OECD Guidelines.
- All the demands made by the complainants are unfounded and without basis in the Guidelines. Furthermore, most of the demands fall outside the authority of the National Contact Point, task of which is to give recommendations on the implementation of the Guidelines.
- Pöyry has been fully compliant with the recommendations given in the Guidelines in connection with the Xayaburi project.

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**THANK YOU!**

