



TRACTEBEL

ENGIE

# EVALS

## Optimization of Potential Hydropower Projects



### A software tool for rapid evaluation of a large number of hydroelectric projects and their corresponding alternatives/alternative sites

A decision and design support system for dimensioning, cost estimation and economic evaluation of hydropower projects.

The tool combines processing terrain data with geospatial algorithms, analysing hydrological data, and calculating bills of quantities based on 3D-modeling and applying tailor-made engineering design approaches developed in house.

#### Our approach

The identification, development, and comprehensive assessment of candidate hydropower schemes require a systematic, yet time- and cost-effective approach. EVALS is our own unique decision support system that facilitates the identification, technical definition, and economic assessment of alternative layouts and thus optimization of potential hydropower projects.

#### Client benefits

Users have the possibility to configure potential hydropower projects using more than twenty different hydropower components over terrain data and assumed particular geological conditions.

EVALS can be used in different phases of a project:

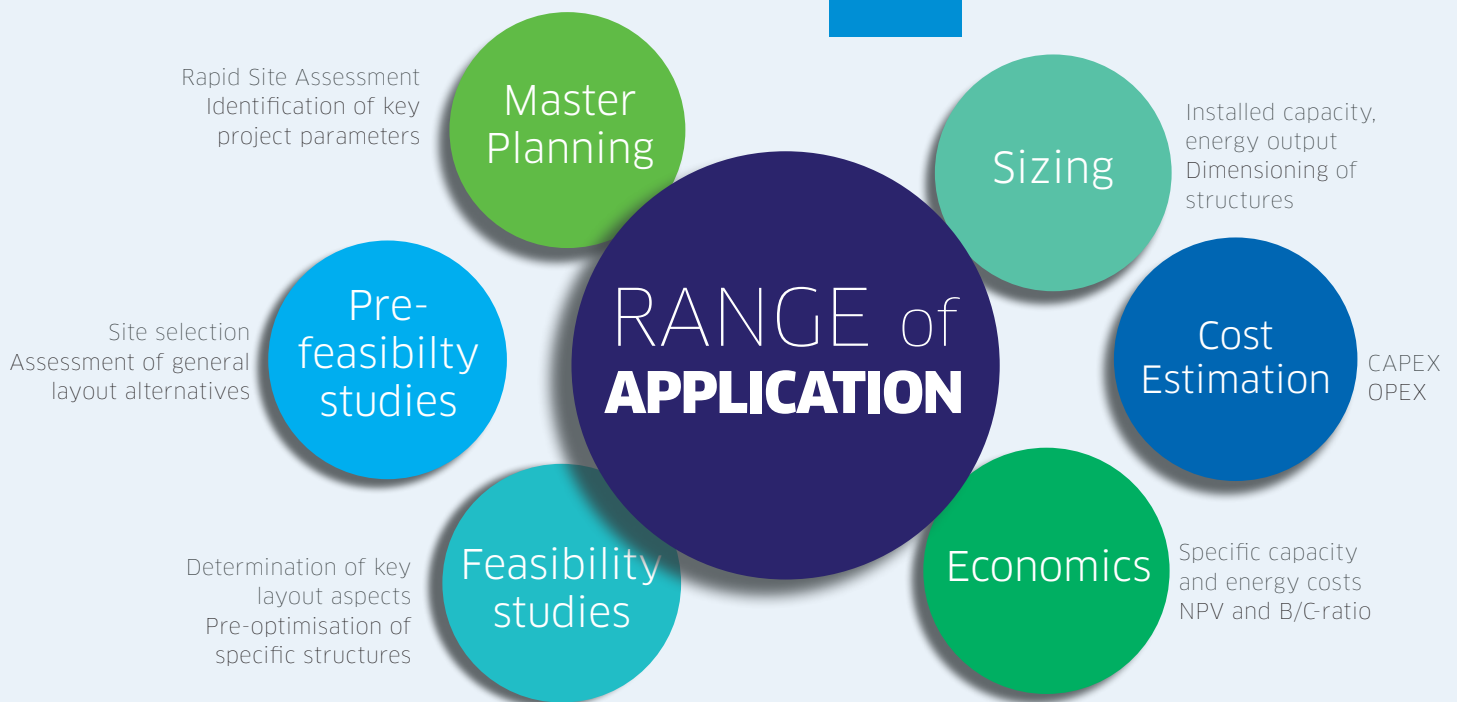
- for a rapid site assessment and identification of key project parameters at masterplan level, ...
- during the site selection and assessment of general layout alternatives at pre-feasibility study phase, and
- in the determination of key layout aspects, and pre-optimization of specific structures during the feasibility study phase.

#### Our added value

The tool significantly improves engineering performance and efficiency in early project phases, enabling the design team to much quicker identify, confirm and address the core issues and challenges with the project site and project layout, leaving more room for creative, cost-effective and sound engineering solutions.



# An outstanding software tool combining sizing and cost estimate artificial intelligence algorithms for hydropower design



## SOME REFERENCES EVALS

### Nepal River Basin Plan & Hydropower Development Plans

#### Objective

Study Nepal's Hydropower Potential, develop and assess potential hydro-power project options and River Basin wide optimization

#### Solutions

MIKE River Basin Hydrological Data Base Combined with GIS topographic model and EVALS project development and assessment

#### Results

Inventory of potential Hydropower Projects with technical and economic key data, economic ranking of candidate projects and optimum river basin development strategy

### Update of POKO & Bakaru HPP Feasibility Studies, Indonesia

#### Objective

Selection of most attractive dam site and project layout for Development of the Poko HPP on Mamasa River on Feasibility Level

#### Solutions

Techn-economic assessment of alternative project layouts, optimization of dam type, dam height and installed capacity

#### Results

Selection of most attractive project layout, optimum dam type and height, active storage and installed capacity. Simulation of plant operation, reservoir sedimentation

### Power Sector Masterplan Sierra Leone

#### Objective

Study SierraLeone's Hydropower Potential, develop and assess potential hydropower projects, prepare portfolio of hydropower development options

#### Solutions

MIKE River Basin Hydrological Data Base Combined with GIS topographic model and EVALS project development and assessment

#### Results

Inventory of potential Hydropower Projects with technical and economic key data, economic ranking of candidate projects