DELIVER SUSTAINABLE POWER PLANTS WHILE IMPROVING BUDGET CONTROL AND ACCELERATING PROJECT EXECUTION

Hydropower generation uses renewable, clean resources to provide start-up on demand and even store power for grid stability, reconciling the needs of business and the environment. In a world where the need for implementation speed for fast return on investment (ROI) is hitting the energy businesses, hydropower projects are handicapped by high capital investment needs during construction, despite very low operating costs during decades of operation.

Dassault Systèmes solutions, powered by the 3DEXPERIENCE® platform, offer hydropower businesses proven, dedicated software. Cost-effective applications help manage engineering and construction, reduce risks, and streamline collaboration among stakeholders from approvals through start-up, and support refurbishment to efficiently extend the life of existing plants.
OPTIMIZE NEW BUILD

Spillways, canals, tunnels, as well as possible drying dams during construction, drive up project cost of earth excavation and backfilling. With 3DEXPERIENCE solutions, engineers can more precisely calculate the volume of earth to be moved, enabling accurate financial sizing and more control over scheduling and costs. Integration of the geological model also helps minimize construction risks inherent with the unpredictable nature of underground layers. This accuracy is obtainable by taking advantage of advanced surface modeling tools developed by Dassault Systèmes for mechanical and style-based packaging industries. Virtual design of preparatory activities, such as building dikes, temporary access routes, dams, and pipes, allows for a phased and controlled approach to construction that helps keep costs and schedules in check.

EXTEND ASSET LIFE

Many hydropower plants were built in the twentieth century, yet there are still opportunities for new dam construction. Plus, the value of existing assets can be increased even when installations become outdated for continued power generation. Revamping installations can extend longevity and also enables technical innovation to increase output or add more pumped storage capacity. After digitizing actual plant assets, 3DEXPERIENCE solutions can help to virtually simulate the dismantling and refurbishing processes, thereby helping to detect potential problems and to generate accurate schedules and procedures.

REDUCE DESIGN TIME

Every construction site is as unique as geography and natural landscapes are complex. Plants can be positioned using powerful knowledge-based design templates, business rules, and formulas that automatically adjust the 3D model of the plant to the shape of the terrain. 3DEXPERIENCE solutions help to quickly analyze several alternatives for the dam, infrastructures, and installations, thereby shortening design time.

"We have recorded major benefits over the years in design and engineering and plan to adopt the 3DEXPERIENCE applications for all our businesses."

—Wang Jinfu, Assistant to the President, HYDROCHINA Chengdu Engineering Corporation (CHIDI)

Our 3DEXPERIENCE® platform powers our brand applications, serving 12 industries, and provides a rich portfolio of industry solution experiences.

Dassault Systèmes, the 3DEXPERIENCE® Company, provides business and people with virtual universes to imagine sustainable innovations. Its world-leading solutions transform the way products are designed, produced, and supported. Dassault Systèmes’ collaborative solutions foster social innovation, expanding possibilities for the virtual world to improve the real world. The group brings value to over 190,000 customers of all sizes in all industries in more than 140 countries. For more information, visit www.3ds.com.