

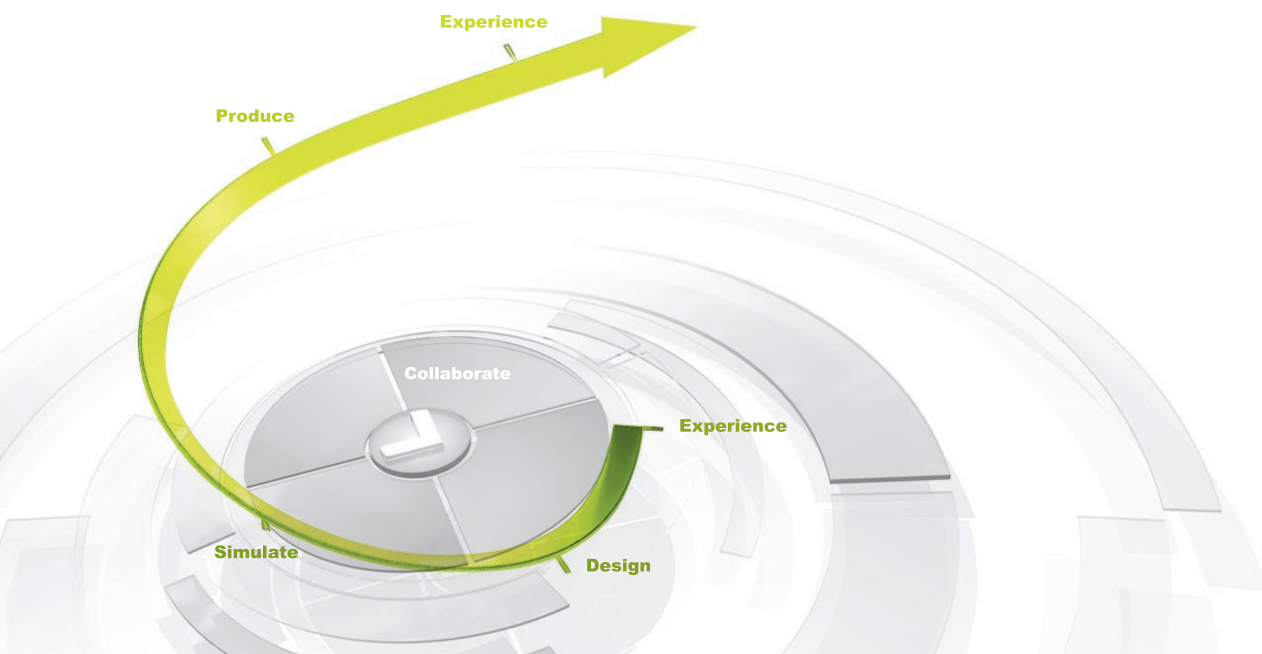
Powering up
your **ENERG4** business processes



Powering up your ENERGY business *processes*

In these difficult economic times where ecological concerns are rapidly increasing, companies race to optimize performance of their energy production assets. Whether their work consists of prospecting, building infrastructures, planning for maintenance, or reducing hazardous situations for operators, companies will need software tools to simulate, organize, design and control their industrial processes. Sophisticated software systems are available to help engineering firms manage projects, from initial design through procurement and construction. As firms manage larger projects, coordinating with partners, contractors, suppliers, inspectors, and others becomes increasingly difficult and crucial. For wind turbine manufacturers, new technologies such as composites need to be mastered in order to deliver highly performant, long lasting equipment in volume.

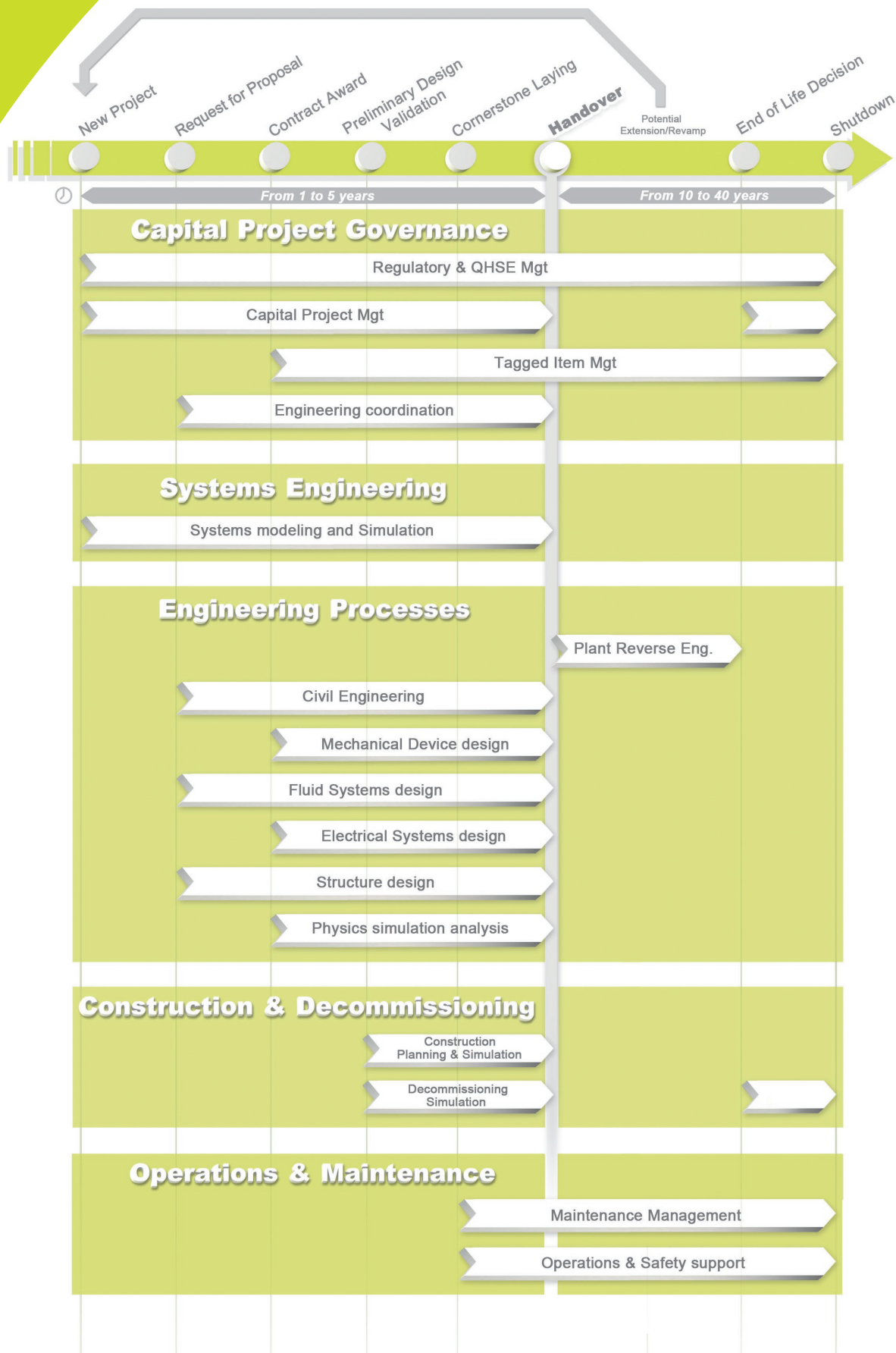
Wind Farms
Nuclear
Maintenance Optimization
Operators Training
Virtual Plant
Refineries
HSE
Refurbishing
Human Platforms
ergonomics
Technical documentation
Power Plants
Offshore
Capital Project Management
Hydro Power
Composites
Program Management
FPSO
Wind Turbines



Dassault Systèmes' Solutions for the Energy Business

www.3ds.com/energy

To maintain their competitive advantage, Energy companies must implement the proper business process transformation to meet the critical challenge they face.



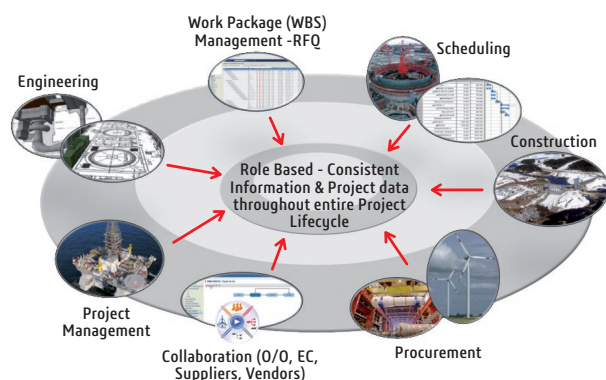
Pressure on delays, efficiency and safety, push operation managers to optimize the major processes of ENERGY plants:

Capital Project Governance:

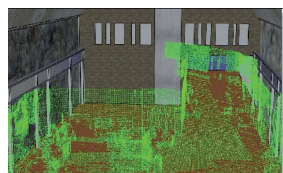
With assets worth trillions of dollars, there's nothing small about the Energy industry. This is why having just one plant, generator or oil rig out of service for a few days can have a tremendous impact on volatile profits.

Tight control of risk and cost management is imperative, especially with construction costs or refurbishment representing billions of investment dollars. Time to market must be reduced while maximizing the value of IT investments – especially when plant management costs are escalating.

The answer is Dassault Systemes's ENOVIA solution suite that provides the essential technology infrastructure, tools, methods, and business best practices.



Engineering Processes:



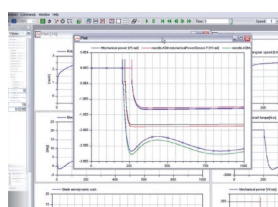
Refurbishing old plants requires reconstructing 3D models from drawings or 3D laser scans, all perfectly handled with the CATIA suite of applications, from structures to piping, electrical and fluid systems design. The SIMULIA suite of applications enables companies to accurately predict complex real-world behavior. This includes strength and deformation in large structures and equipment with linear and nonlinear analyses, impact of thermal loads, vibrations, and degradation due to corrosion, and how fluids, gasses, and structures interact. Our industry-leading modeling and visualization software coupled with our sophisticated analysis solvers provide a complete and reliable solution for the Energy and Process industry.

Construction and Decommissioning:



In the nuclear, power or Oil & Gas industry, project delays and health and safety issues in major projects can drive up costs. With more than a million dollars per day on the line, companies can no longer afford not to validate their outage schedule in a

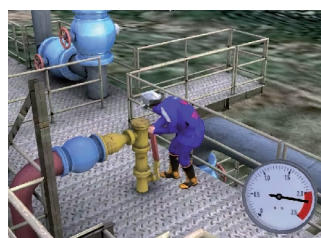
virtual environment. DELMIA's virtual maintenance solution is used to plan and validate the critical operations of the outage schedule, simulate kinematic mechanical devices like cranes and robots, and simulate and analyze worker activities with detailed ergonomic analyses to ensure their health & safety.



Systems Engineering:

Designing a plant is a huge undertaking. A plant consists of a multitude of systems and sub-systems from various disciplines, such as mechanical, piping, instrumentation, electrical, steel

structure and civil engineering, all with interconnected functions that must be carefully orchestrated. The Dassault Systèmes Systems Engineering solution helps engineers formalize, share and manage a unified, cross-discipline systems development process, with complete traceability of system definition, functional, logical, physical, and simulation aspects.



Operations & Maintenance:

With 3DVIA Composer, organizations converse using the universal language of 3D documentation, which includes additional information, intelligence, and traditional

2D information. Virtual training puts operators and maintenance crews in lifelike situations where, by virtually experiencing the real world, they are able to develop the appropriate response and behavior needed in emergency situations.



Nuclear Power Plants

Safety and state regulations are crucial in the design, operation and maintenance of nuclear facilities. Operator safety and training require sophisticated virtual simulation tools.



Hydro Power Plants

Building dams involves numerous technologies such as terrain modeling, concrete and steel structural design and analysis, fluid calculations and machinery implementation and maintenance.



Oil & Gas facilities and FPSOs

Reducing shutdown time is a major challenge for owner/operators of refineries or offshore platforms. FPSOs' increasing demands require complex design capabilities and worldwide management tools.

Wind Turbines and Wind Farms

This new industrial sub-segment requires the use of sophisticated composite technologies, which are the result of Dassault Systèmes' long experience in the Aerospace Industry.



What our customers say



ENOVIA Engineering Central is at the core of our Enterprise Configuration Management System.

Bernie Merritt,
NIF Configuration Management and Integrations Manager, Lawrence Livermore National Laboratory

We needed to extend our finite element capabilities and Abaqus from SIMULIA was, by far, the best solution available

Jon Benzie,
Senior Engineer, Pelamis Wave Power

DS PLM has enabled us to integrate the mechanical and plant design of ITER, respect extremely rigorous quality requirements, and do so with limited resources.

Eric Martin,
Design Office Head, ITER

Using DELMIA to optimize our feasibility study meant that Hydro-Quebec was able to reduce its project timeline by 200 weeks.

Hydro-Quebec Case Study



Dassault Systèmes

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FRANCE



Partner Products:

Hundreds of industry-specific software applications and technologies are developed by our partners to complement Dassault Systèmes' product portfolio.

These solutions, from electrical to scanning, tolerancing to special analysis software, are native and fully integrated in the Dassault Systèmes solutions.

On the PLM MarketPlace web site, customers can find solutions

and request a quotation online at :

www.plmmarketplace.com.

DS Industry Services:

The mission of DS Industry Services is to support the growth of DS Software through successful customer deployment, to accelerate the adoption of DS products by leveraging the consultative knowledge of industry business processes and to help our service partners when implementing our solutions.



Visit our online **ENERGY Interactive showroom** and experience the 33 demonstrations and live applications in a realistic 3D environment. **<http://interactiveshowroom.3ds.com/energy>**

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See What You Mean