T.EN TECHNIP ENERGIES

Digital Plant Performance Improvement (DPPI)

Context

In today's increasingly competitive environment, the energy and chemical industry is facing growing challenges to constantly improve yields and throughput with a rational use of energy in a safe environment.

To overcome these challenges, operators need complete and reliable analysis to predict the physical and economic consequences of operational changes, which require structured insights, especially as market constraints change over time.

Service description

Capitalizing on our extensive experience in process design and technology licensing for the energy and chemical industry, Technip Energies is offering a new and innovative service for Digital Plant Performance Improvement (DPPI), the first all-in-one digital solution.

DPPI optimizes profit margins by building a cooperative cloud-based digital twin of our clients' complex physical plants.

Our team of experts study plant data to define initiatives for improvement by jointly monitoring the DPPI platform.

DPPI is a fast and powerful service that uses proven methodology to implement targeted initiatives and troubleshoot issues.
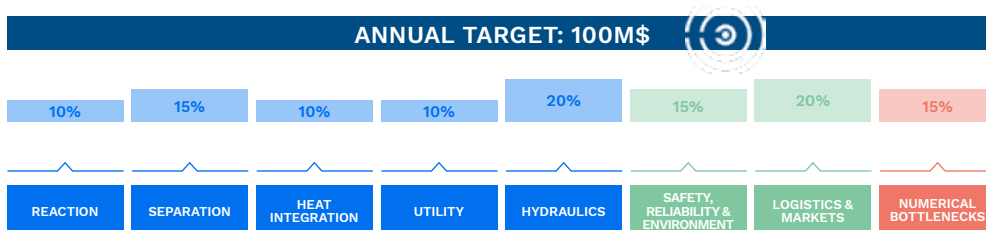
Added value

FOR PLANT MANAGEMENT	FOR PLANT OPERATORS
• Increase asset profitability	• Technip Energies expert recommendations for operational excellence
• Reduce carbon emissions	• Access to performance optimization insights
• Upskill workforce	• KPI monitoring
• Enhance energy transition via DPPI decarbonization	• Best practices between sites
• Support sustainable ESG policies	• Knowledge transfer to young engineers
• Accelerate digital transformation by starting a digital plant	

Potential annual margin gain

Technip Energies' Digital Plant Performance Improvement is designed to improve plant profitability through our digital tool box.

ANNUAL TARGET: 100M$

10%	15%	10%	10%	20%	15%	20%	15%
REACTION	SEPARATION	HEAT INTEGRATION	UTILITY	HYDRAULICS	SAFETY, RELIABILITY & ENVIRONMENT	LOGISTICS & MARKETS	NUMERICAL BOTTLENECKS

Example of margin gain repartition for typical European energy and chemical plant

Input vs Output

DPPI input data:
- Real-time plant data (connectable to any historian)
- Historical plant data
- Plant design information
- Plant pain points
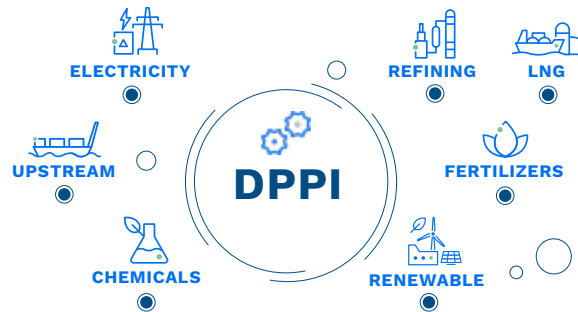- In-house expertise and DTB plug-in tools

DPPI output data:
- Advanced monitoring with comprehensive process information
- A maximum of 20 SOFDs for a complex plant
- Initiatives for margin improvement (about 80 for complex plants)
- Green KPI monitoring with total CO_2 emissions balance (Scope 1,2,3)
- Troubleshooting
- Energy efficiency
- Decarbonization strategies
- Fast cost evaluation
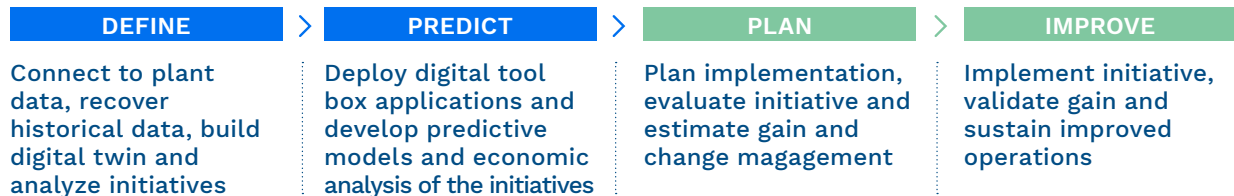- Real-time economics

Applicability

A versatile service, DPPI can be implemented in just a few weeks in any energy and chemical sector, including **upstream, LNG, refining, petrochemistry, fertilizers, electricity and renewables.** Designed as a long-term solution, DPPI can be tailored to fit specific client requirements as a stand-alone tool for energy efficiency studies, decarbonization analyses or troubleshooting.

ELECTRICITY
REFINING
LNG
UPSTREAM
DPPI
FERTILIZERS
CHEMICALS
RENEWABLE

Implementation proven methodology

DEFINE	PREDICT	PLAN	IMPROVE
Connect to plant data, recover historical data, build digital twin and analyze initiatives	Deploy digital tool box applications and develop predictive models and economic analysis of the initiatives	Plan implementation, evaluate initiative and estimate gain and change magagement	Implement initiative, validate gain and sustain improved operations

DPPI IS BUILT ON 3 PILLARS

A | SOFD
Smart Operating Flow Diagram a shared interface centralizing topology, measured data and inferences for a crystal clear view of plant operation.

B | DTB
Digital Tool Box containing 35 digital tools ready for implementation enabling the exploitation of the seven fundamental layers of a plant.

C | RDDM
Robust Data Driven Models combining first principles, machine learning and DTB tools to fit plant behavior and identify the gaps to reach best possible operations.

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To find out more, visit:
https://beyond.technipenergies.com/

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watch the video!

www.technipenergies.com