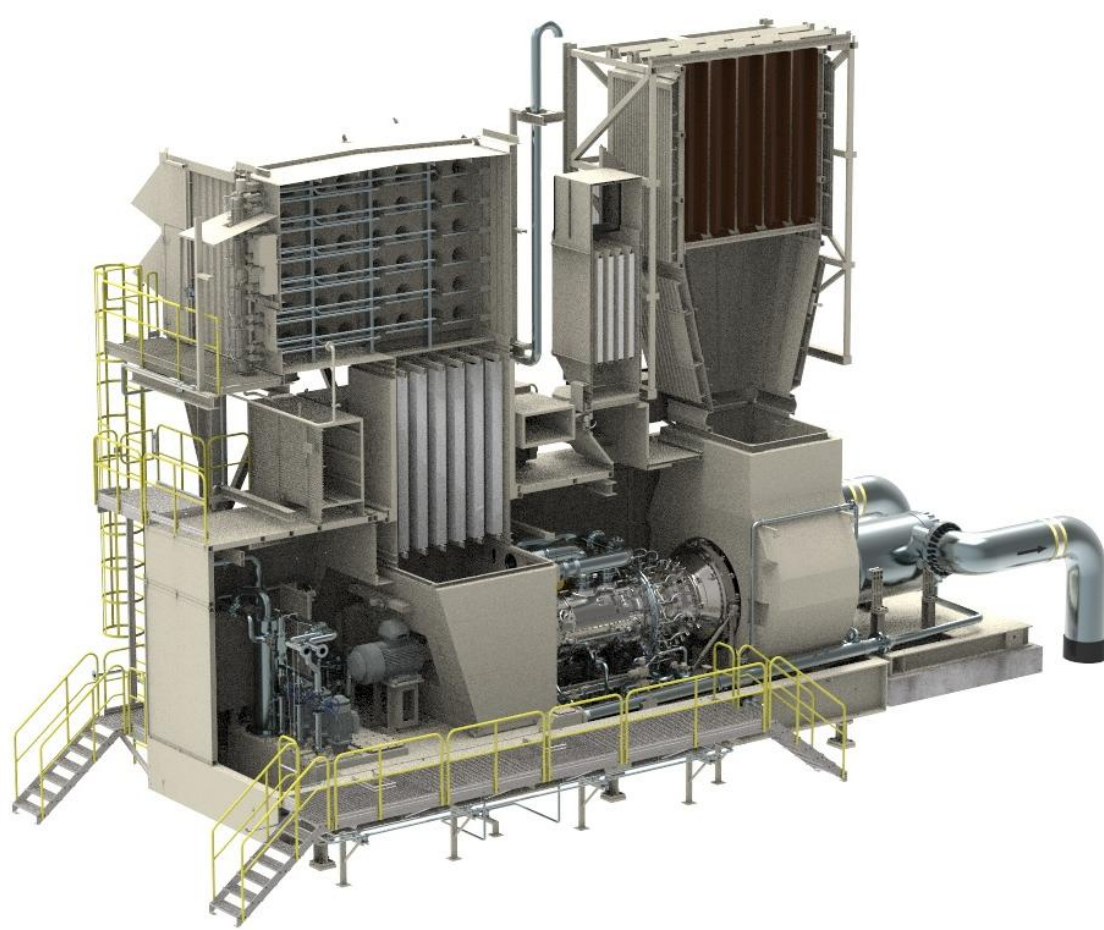


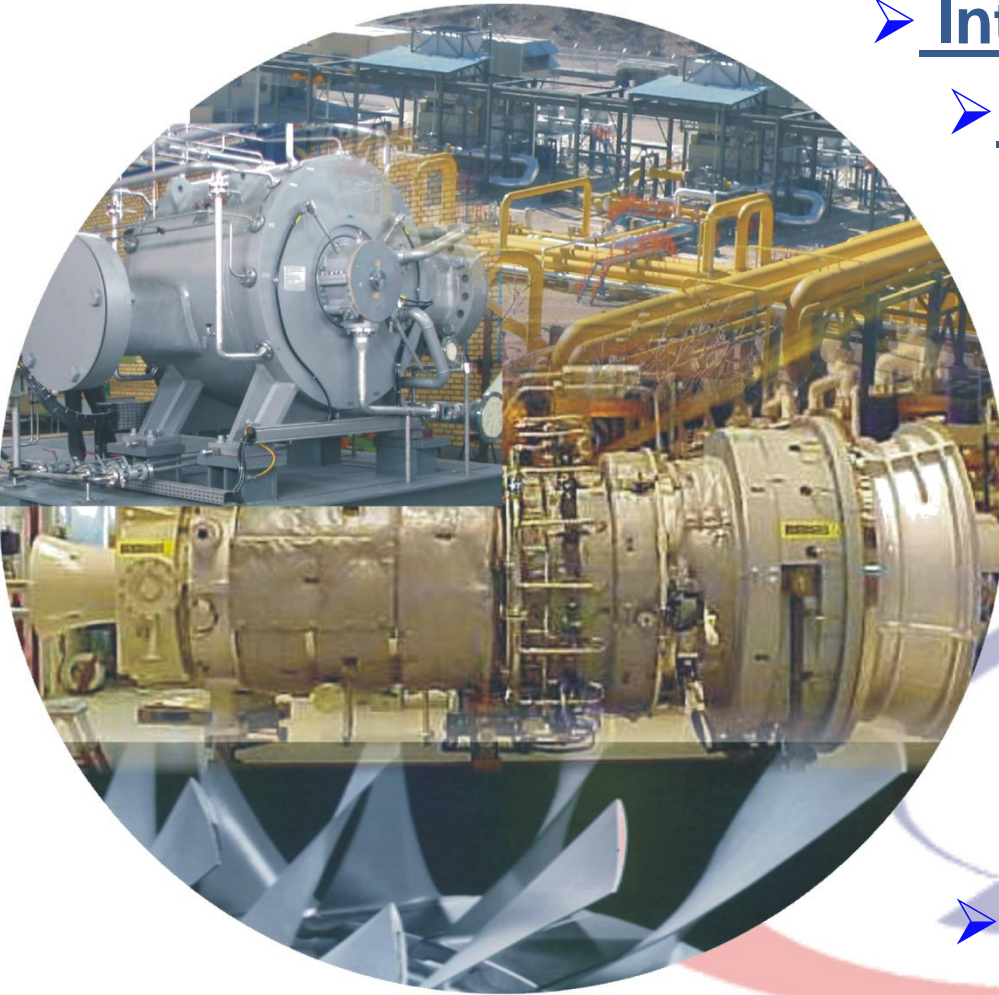


OTC Capabilities Overview



February 2016

Oil Turbo Compressor Co. (OTC)



- Introduction
- History of Cooperation
- References
- Strategic Partners
- OTC's Share in Market
- OTC Workshops
- Sanctions Achievements
- New Signed Contracts
- Training Center

Introduction of OTC



**Design, Manufacturing & Service for Turbo
Compressors & Turbo Generators of
Iranians Oil & Gas Industry**

Established in
03rd Jan. 2001

OTC Vision 2020



**Leadership in
After Sale
service for Oil
& Gas rotary
equipment
(esp. modern
GT) in LTSA
format (35%
of revenue)**

**Leadership in
rotary
equipment
market
Supply of Oil
& Gas
Industry in
Iran (50% of
revenue)**

**Acceptable
presence in
DG market of
Iran (5% of
revenue)**

**Acceptable
Presence in
Target market
outside of
Iran (10% of
revenue)**

**To Achieve
know-how of
design &
manufacturin
g in core
components
of business**



Diversified Product Portfolio in Oil & Gas Industries (& D.G.)

- Gas Turbines Up to 60 MW (4 Series of Products for Oil & Gas and DG)
- Compressors (wide range and applications of Oil & Gas Ind.)
- Steam Turbines Up to 100 MW (M.D. and P.G.)
- Gas Engines for D.G. & M.D. (0.5 MW – 10MW)

Joint Venture with Companies for Design, Manufacturing & Packaging

- Joint Design & Development (e.g. 16 & 25 MW GT)
- Joint Manufacturing for main c (e.g. 16, 25 & 50 MW GT's)
- Packaging of some products (e.g. gas engines)

Executable Plan for OTC Vision 2020



LTSA and O&M services for modern rotary equipment

- ❑ LTSA for the whole modern gas turbines in Oil & Gas Ind.
- ❑ Upgrading of GT based on OTC know-how to capture more market share & customer satisfaction

Solutions based on OTC's Product Portfolio

- ❑ Basic Design of rotary equipment plants in Oil & Gas Ind. (Gas Stations, Ref. Cycles, ...)
- ❑ Basic Design of power Plants (CHP, CCHP, CWP, CCPP)

Focused Marketing & Financing

- ❑ To Create Financial arm for OTC
- ❑ Capturing orders of NIGC & NIOC with guarantees for Iranian Brand & Local Manufacturing (Technology Transfer)
- ❑ J.V. with main Oil & Gas EPC Contractors for New Projects

References: (Manufacturing)



Turbo Compressors: 127 Units are delivered

Project	Client	Units	Capacity	Last Status
50 TC	NIGC	50	25 MW	50 Units are delivered and on operation
IGAT 5 Pipeline	NIGC	22	25 MW	22 Units are delivered (12 units on operation)
POGC 40 TC	POGC	35	25 MW	20 Units are delivered (16 units on operation)
100 TC	NIGC	100	25 MW	30 Units are delivered (19 units on operation)
South Pars Phase 20-21	OIEC	7	25 MW	5 units are delivered

References: (Manufacturing)



Electro Compressors: 53 Units are delivered.

Project	Client	Units	Type	Last Status
South Pars Phase 12	Petro Pars	12	Refrigerant	12 Units are delivered
South Pars Phase 12	Petro Pars	6	Process	6 Units are delivered
South Pars Phase 15-16	Petro Sina Kish	6	Refrigerant	6 Units are delivered
South Pars Phase 17-18	OIEC	6	Refrigerant	6 Units are delivered
West Ethylene Pipeline	NIPC	23	Ethylene	16 Units are delivered, the rest are in OTC warehouse

References: (Supply)



Turbo Generators: 10 Units are delivered.

Project	Client	Units	Capacity	Last Status
Tabriz Refinery	EIED	2	25 MW	Units are on operation
Khark Methanol 2	KPC	3	25 MW	Units are under installation
Khark NGL	IRITEC	5	25 MW	Units are delivered

Contracts Values (2014)



Field of Activity	Contracts Value	Finished	On Progress
Manufacturing	1900 M€	885 M€	1015 M€
EPC	785 M€	760 M€	25 M€
E	6 M€	6 M€	----
C	96 M€	96 M€	----
Services	168.1 M€	132.8 M€	35.3 M€
Total	2955.1 M€	1879.8 M€	1075.3 M€

New Signed Contracts



	Capacity (MW)	Location or Project Name	Customer
Turbo Generator	6*25	Qeshm Island Power Plant	Ameran Ofogh
Turbo Generator	2*25	CCHP Pardis	Pardis Tech.& Research Park
Turbo Compressor	2*25	Bushehr	Bushehr Petro Chemical Co.
Turbo Compressor	6*25	C2 Recovery	Petro Palayesh Kangan Co.
Turbo Compressor	5*25	South Pars Phase 20-21	OIEC

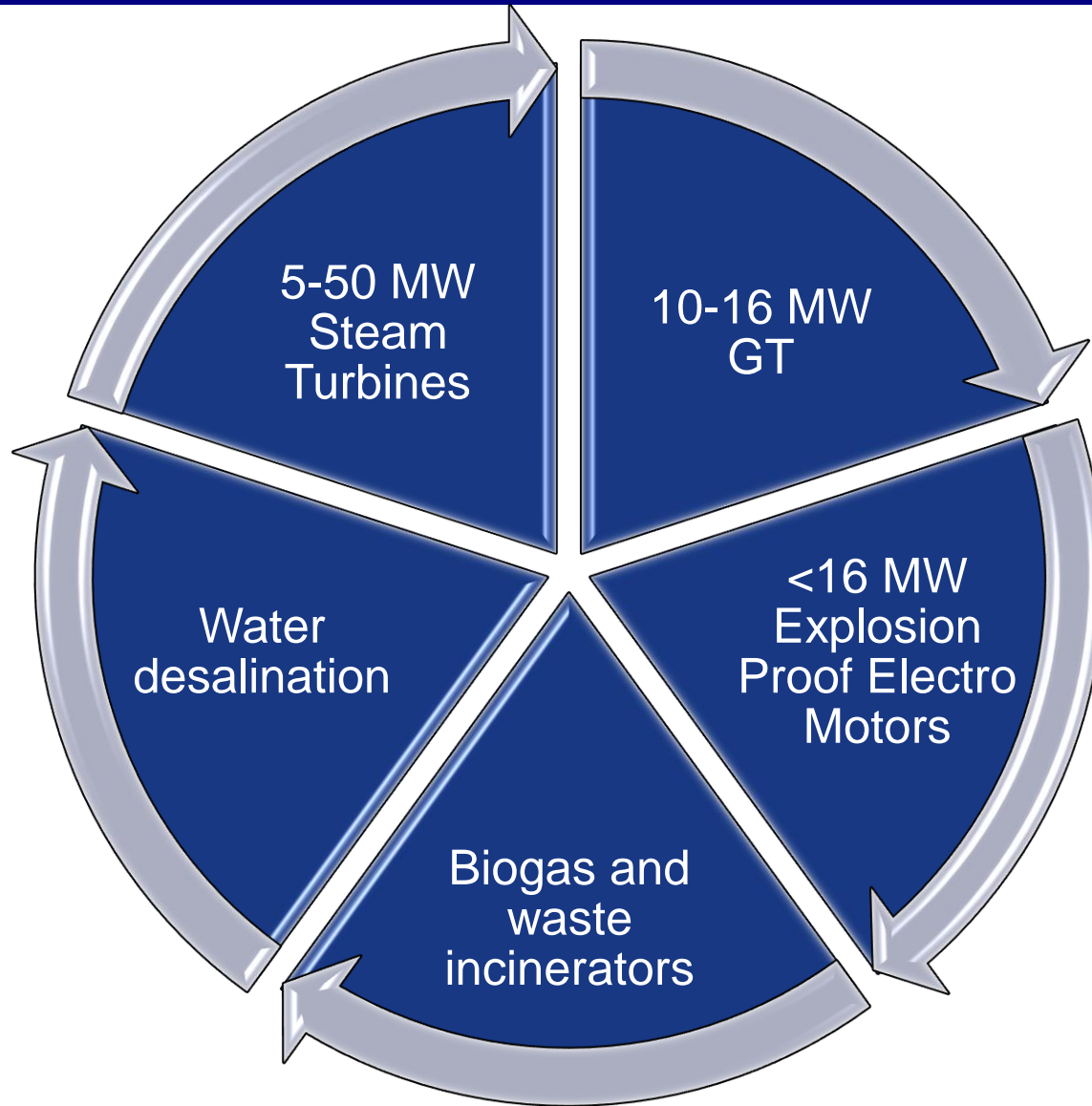
New Signed Contracts



	Capacity (MW)	Location or Project Name	Customer
Electro Compressor	15 units various capacity	Sarvak Azar	OCEC (Matn)
Electro Compressor	14*14	Kangan	ICOFC
Total New Signed Contracts values: 460 M€			



Under negotiation Projects: New Products



Under negotiation Projects



**The estimated values for
Under negotiation Projects
except New Products:
1600 M€**

OTC's Share in Iran Gas Market






















Description	Stations are equipped with TCs ,25 MW	Stations are with	The share of OTC
All operational stations from the first			66.6%
Stations are on operation in passed 10 years			78.5%
All 25MW TCs stations		78	66%
All 25MW TCs in passed 10 years		78	79.6%
Total capacity of 25MW TCs	2691	1981	73.6%
Total capacity of 25MW TCs in passed 10 years	2481	1981	79.8%

OTC portion:
More than 60% of
daily Gas delivery

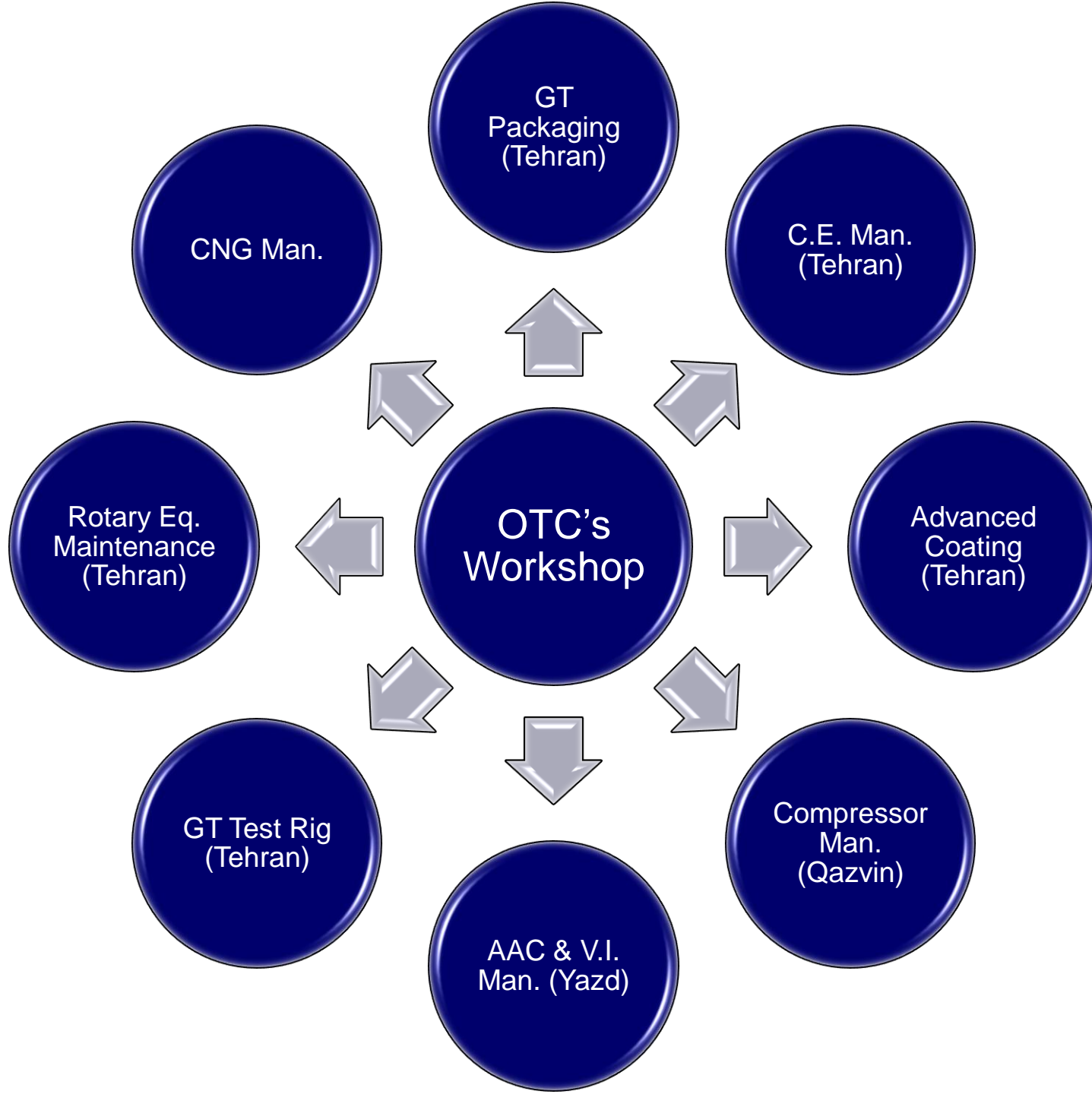
Location of Stations in the Pipelines



-  Azerbaijan Pipeline
-  IGAT 3 Pipeline
-  IGAT 4 Pipeline
-  IGAT 5 Pipeline
-  South Pars Phases
-  Power Generators

IGAT 1	
IGAT 2	
IGAT 3	
IGAT 4	
IGAT 5	
IGAT 6	
IGAT 7	
IGAT 8	
IGAT 9	
WEST	
KERMAN	
FIRST N-NE	
SECOND N-NE	





GT Core Engine Workshop



GT Core Engine Workshop



GT Core Engine Workshop



Facilities: (Gas Turbine Assembly)



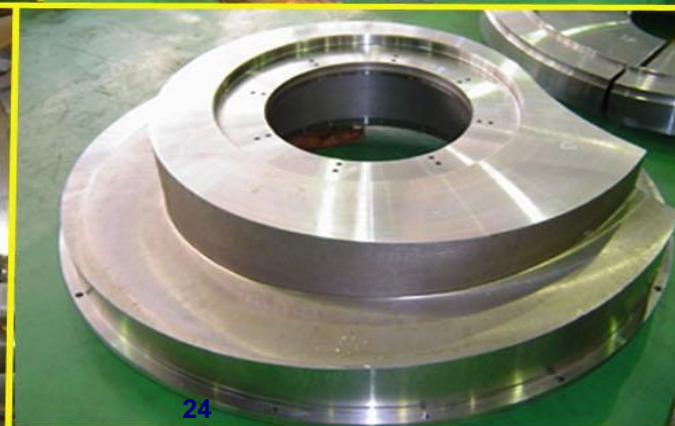
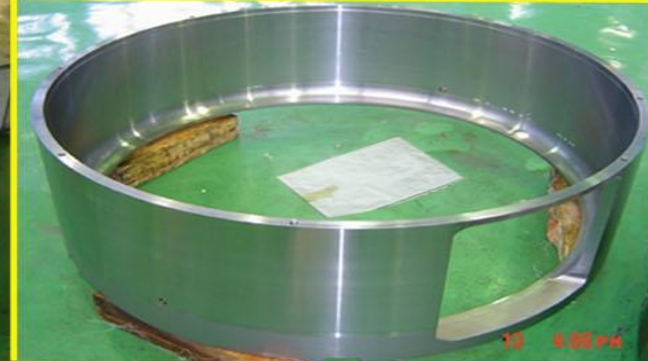
Facilities: (Compressors mfg.)



Facilities: (Compressors Body)



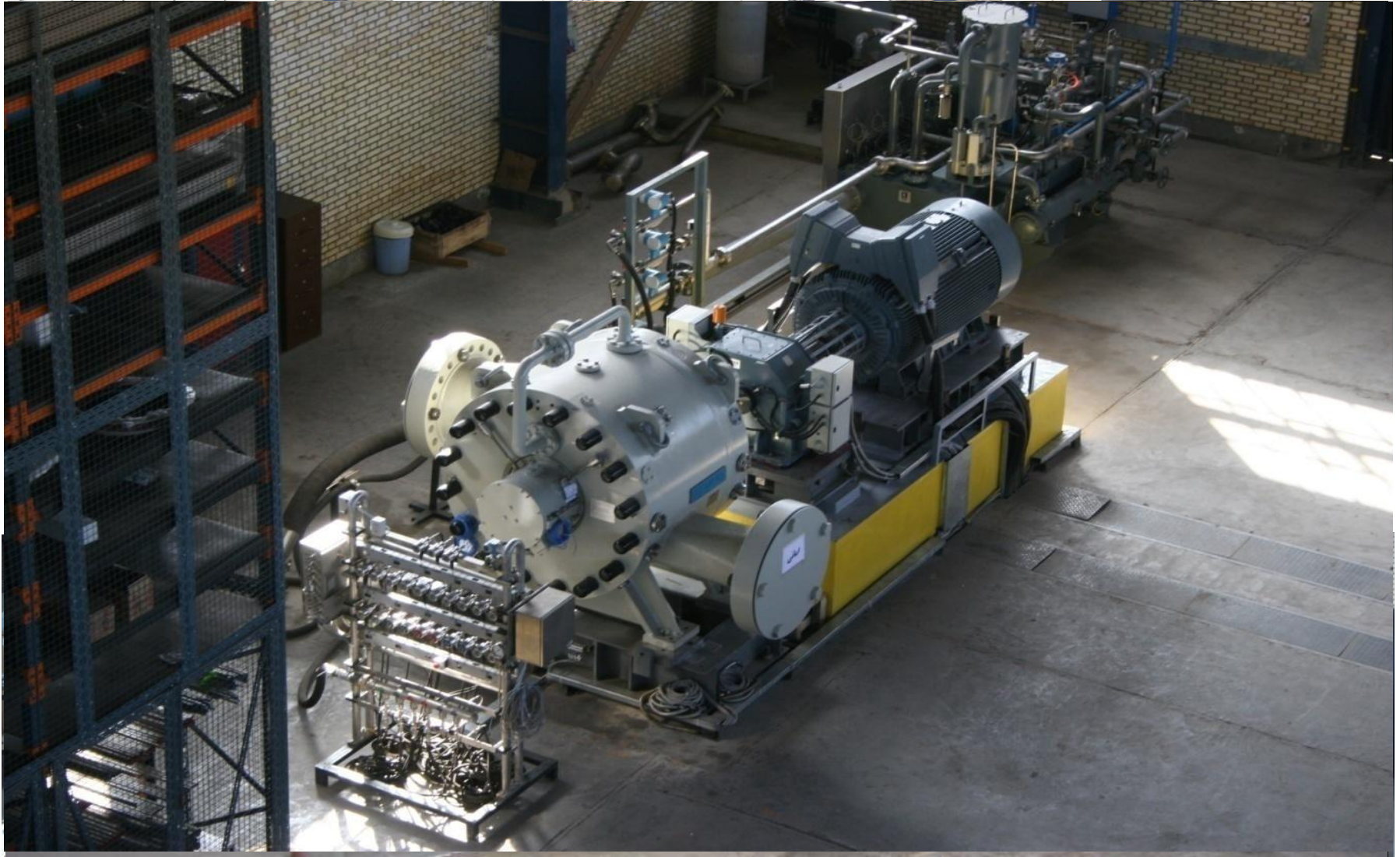
Facilities: (Comp. Internal Parts)



Facilities: (Comp. Internal Parts)



Facilities:(Comp. Assembly & Test)



Facilities: (Compressors mfg.)



Facilities: (Electro Compr. mfg.)



Facilities: (GT Test Workshop)



OTC's GT Product Portfolio



Product

IGT50

50

45

40

IGT35

35

IGT25
(PC)

30

IGT25

25

20

IGT15

15

10

IGT5

5

0

0

10

20

30

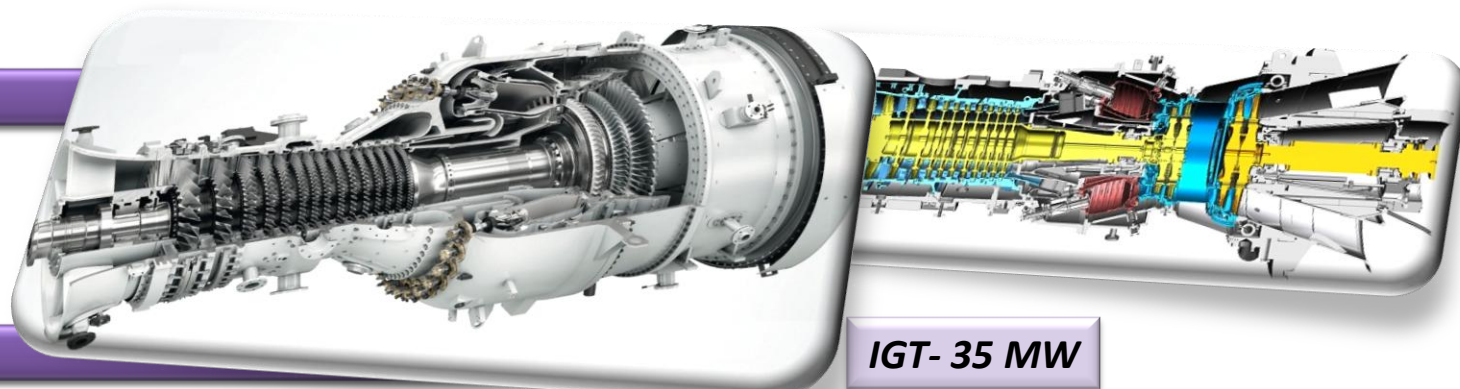
40

50

Developed

Under development

Capacity (MW)



IGT- 35 MW

IGT25: 25MW GT Class

IGT- 28 MW

IGT- 25 MW

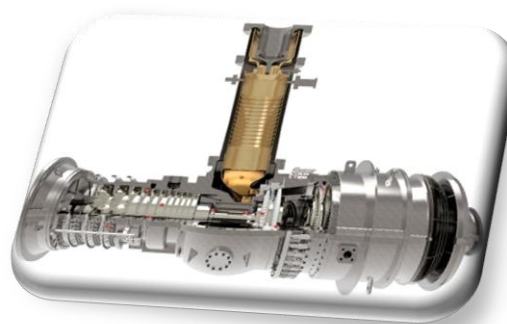


IGT25 (MC)

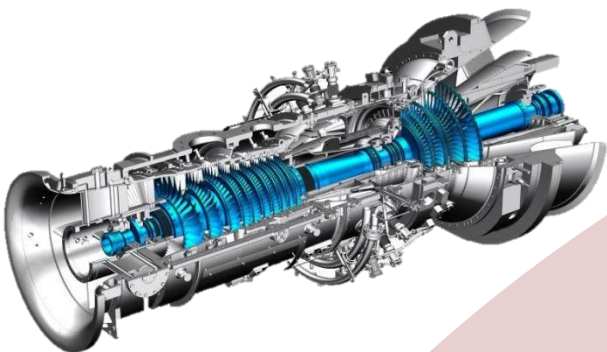
IGT25 (FC)

IGT- 15 MW

IGT- 5 MW



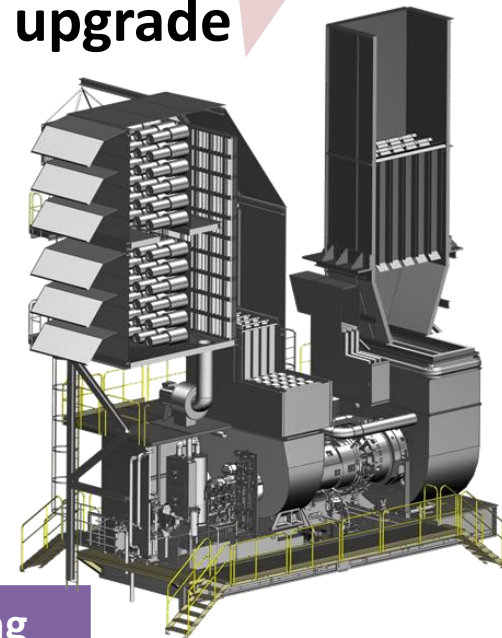
Roadmap



● **IGT25 Version 1: Bottom Up Design** **Complementary modules**

● **Enhance & redesign components for IP rights**

● **Package major upgrade**



GT design review

enhancement

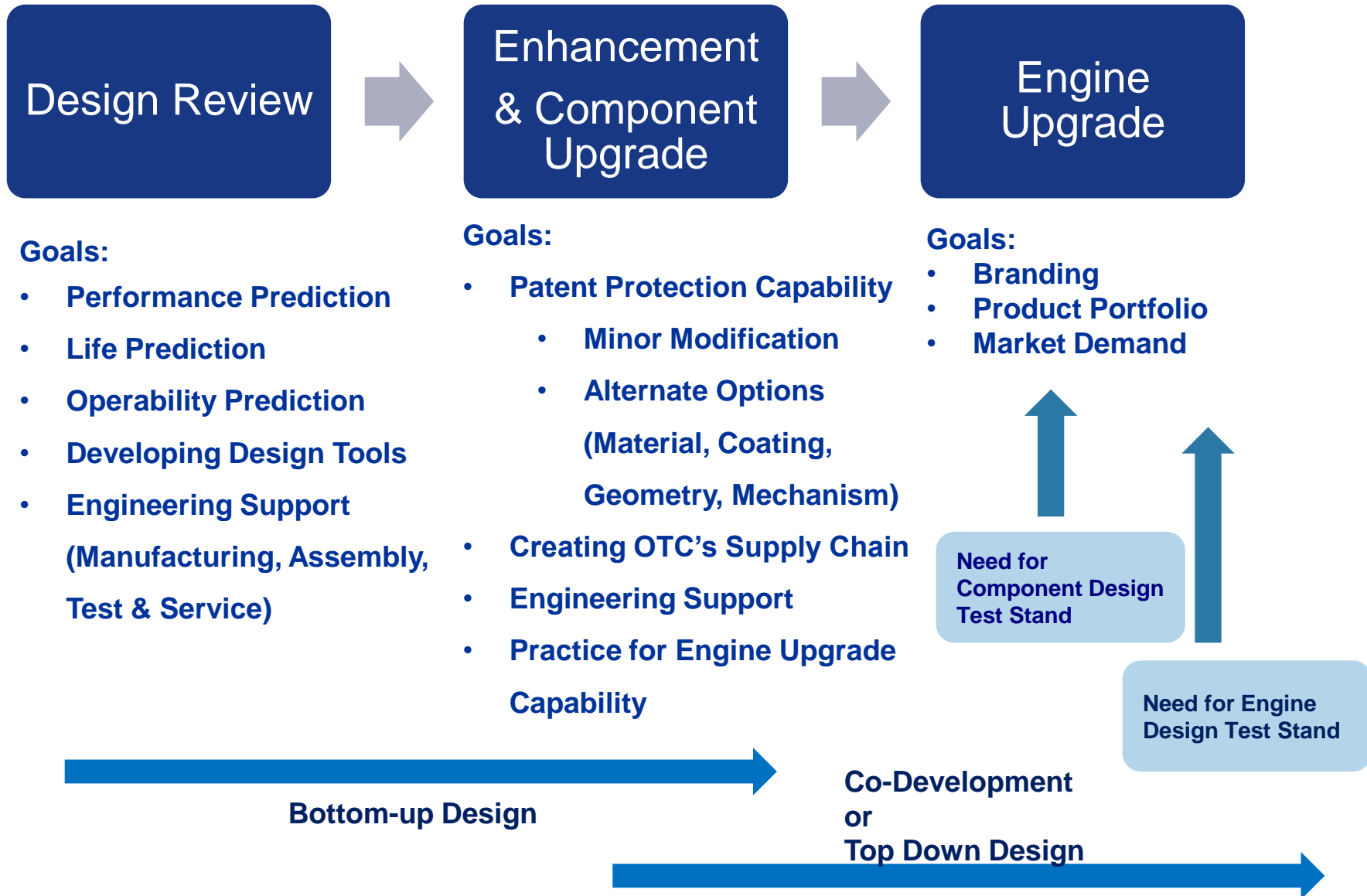
Major upgrading

20units

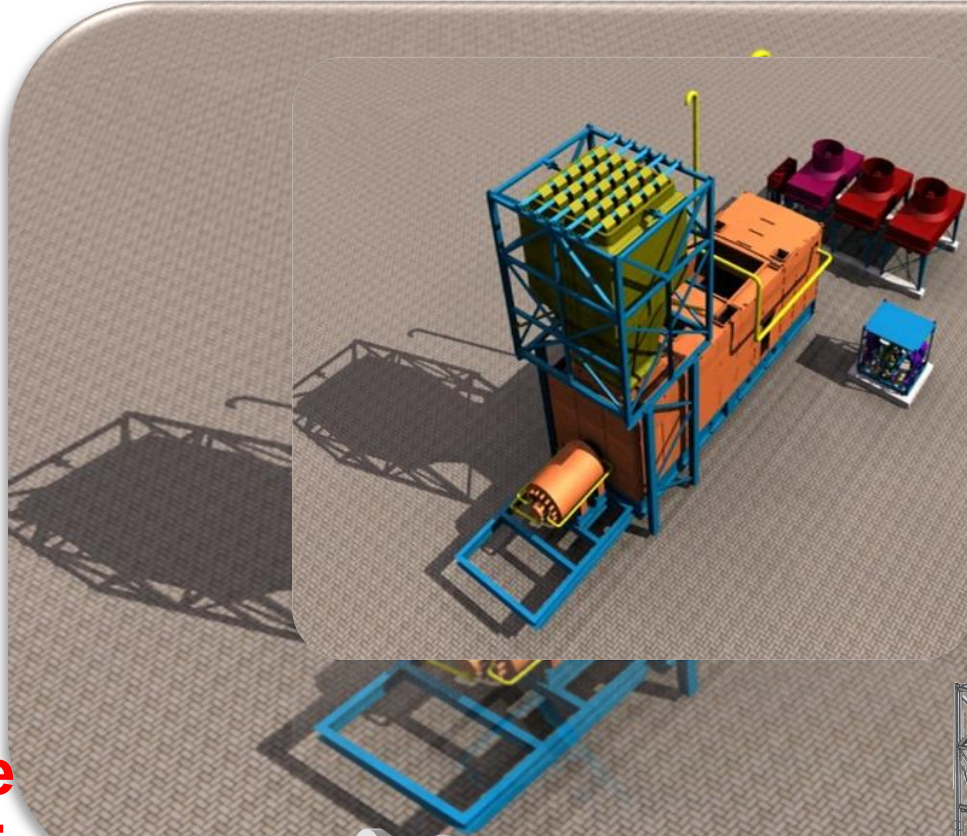
20 units

60 units

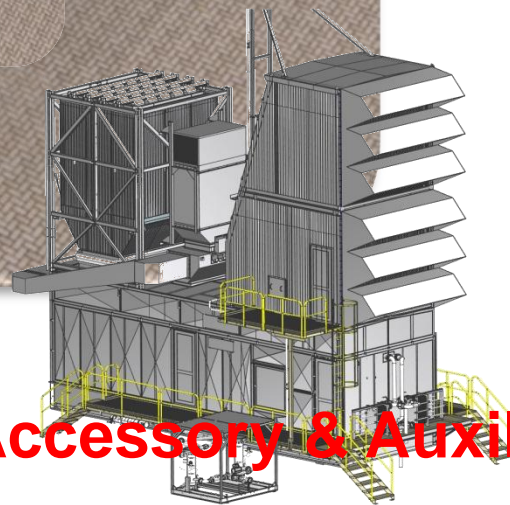
GT Design Program



IGT25 Package upgrading

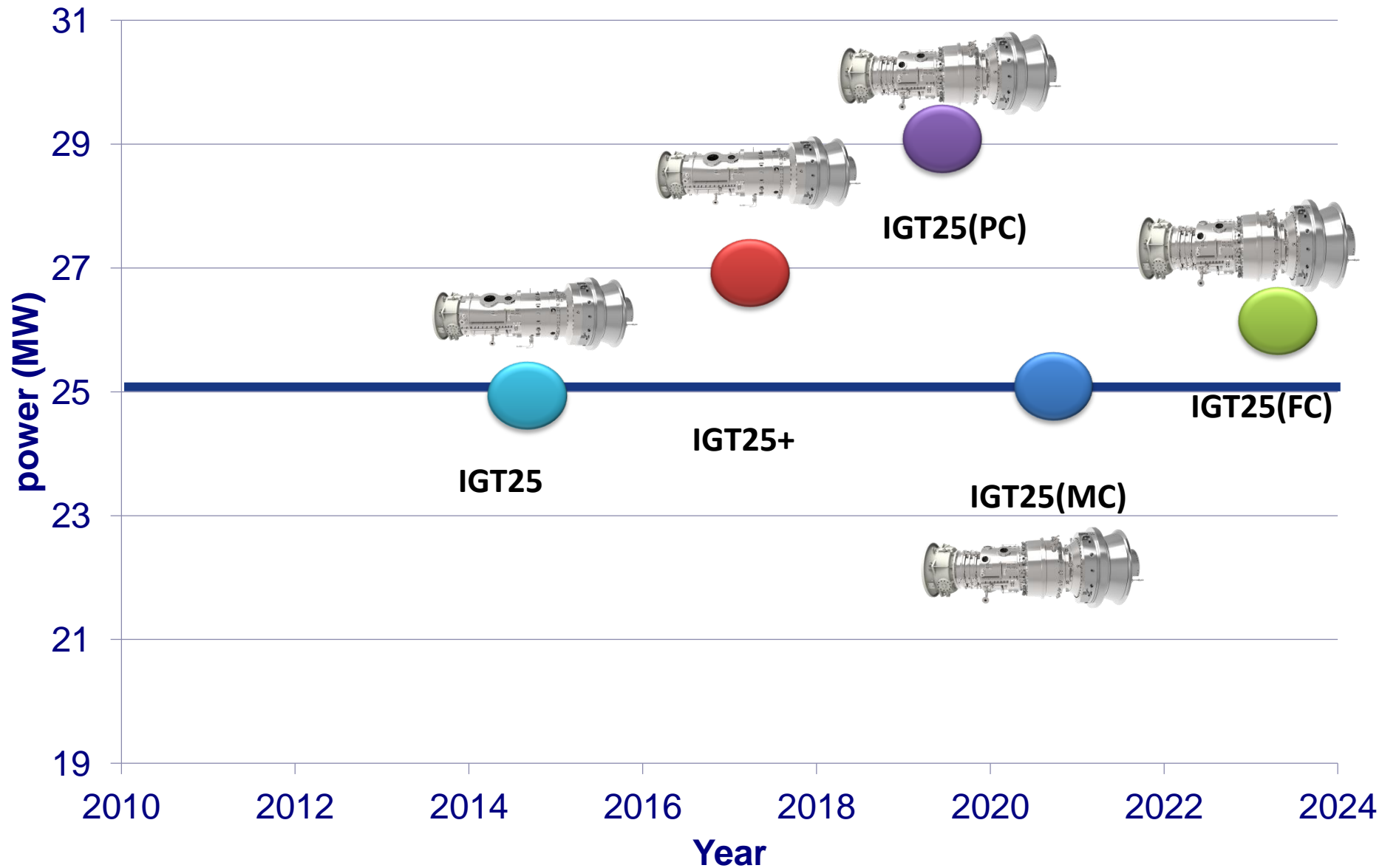


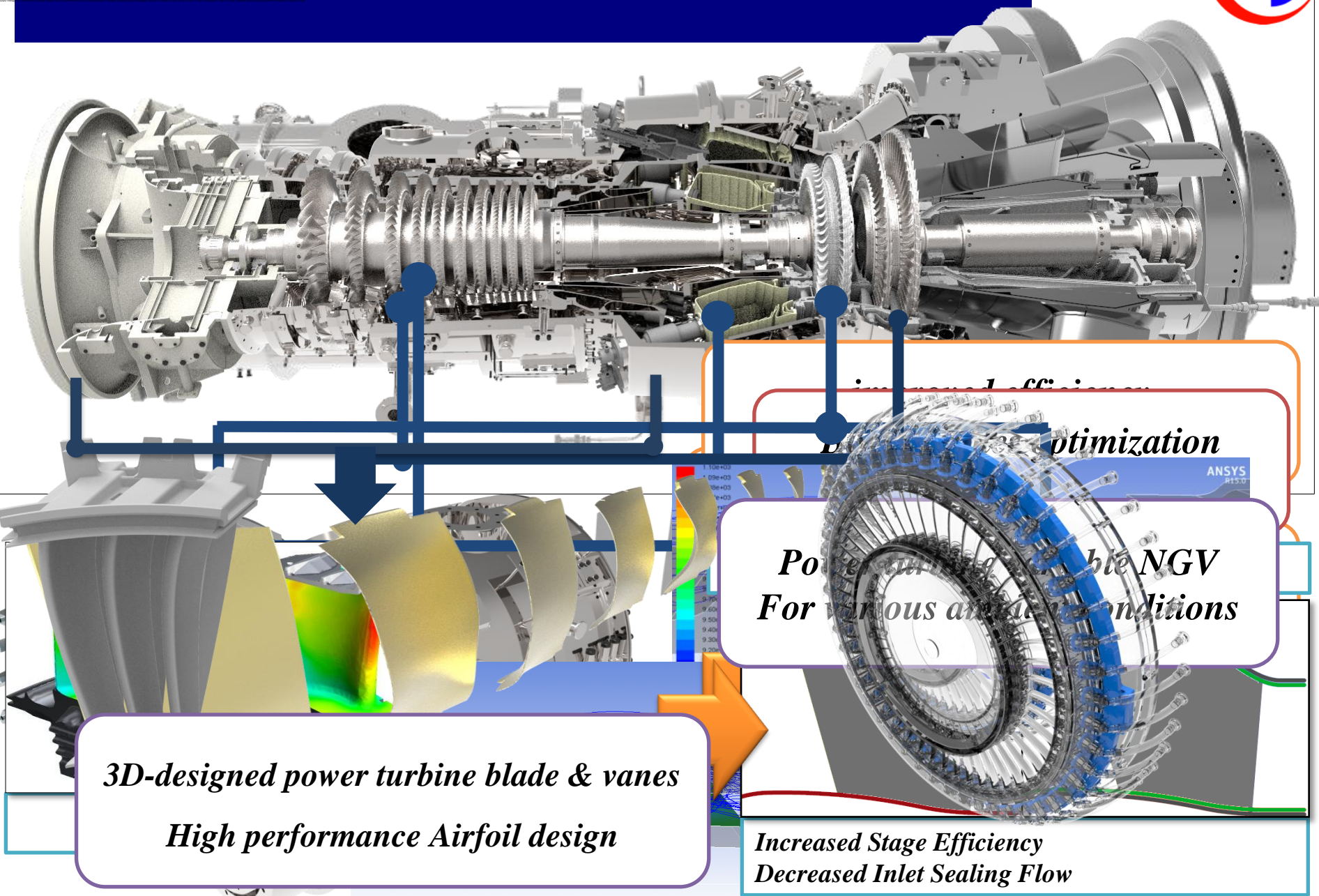
Core Engine



Accessory & Auxiliary

IGT25 upgrading time line





3D-designed power turbine blade & vanes
High performance Airfoil design

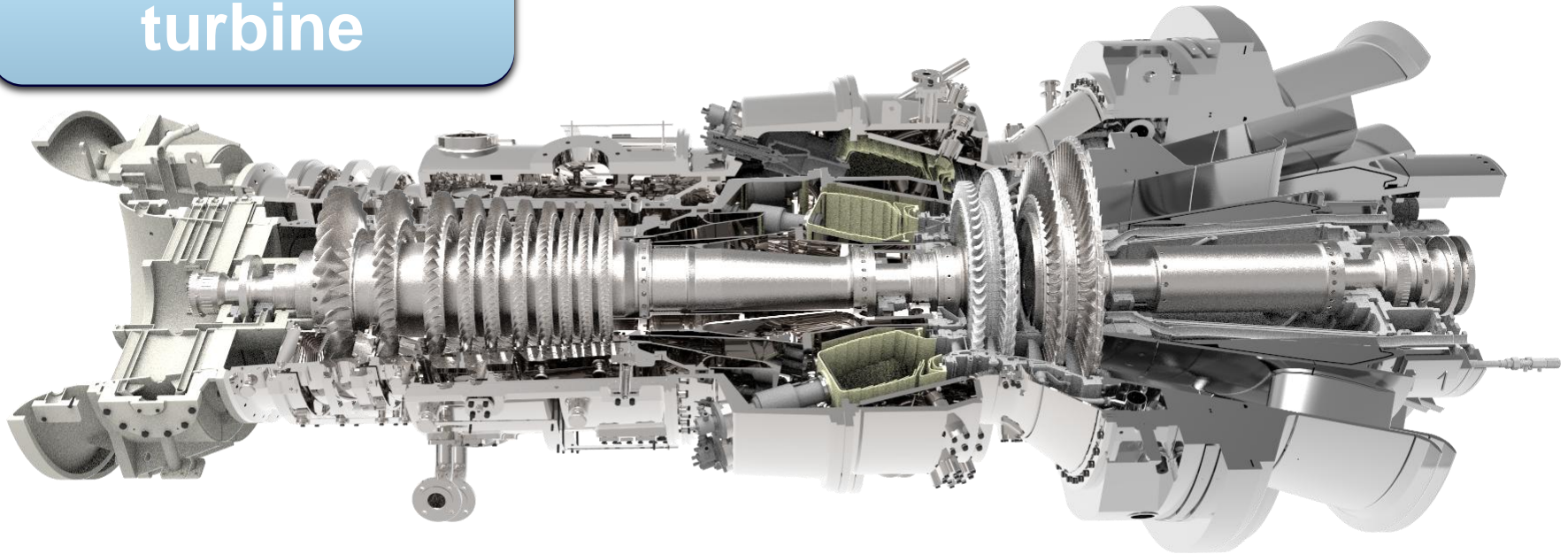
Optimization
Power turbine NGV
For various ambient conditions

Increased Stage Efficiency
Decreased Inlet Sealing Flow

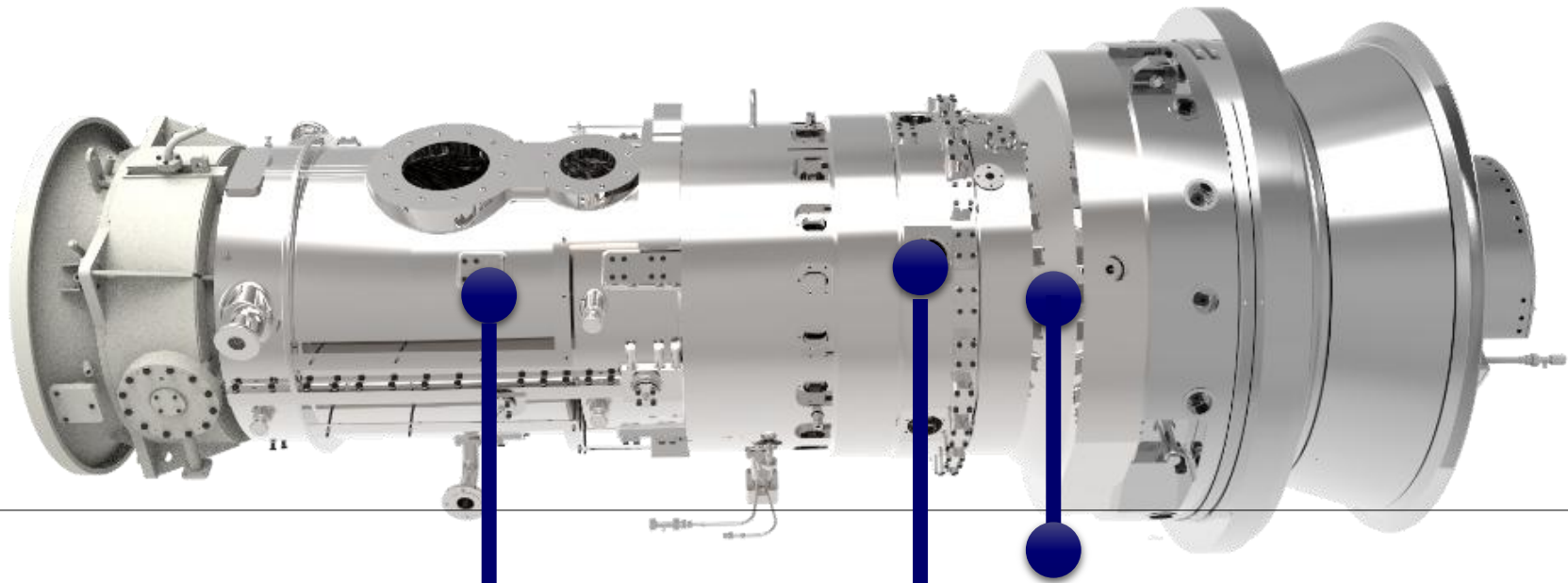
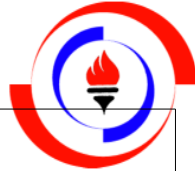
IGT25-PC



IGT25-PC Gas turbine



IGT25-MC



- ✓ New next generation super alloy
- ✓ New coating technology (Nano)
- ✓ Modification in liner geometry to improve temperature distribution

- ✓ New material technology (single crystal, DS)
- ✓ New modern coating implementation
- ✓ B&V internal cooling modification