



Speed

Fast deployment of LNG infrastructure in parallel to PP



Simplicity

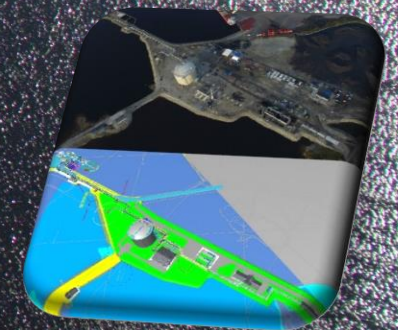
Focus on value adding activities



Growth

Anticipate 5% growth for the coming 5 years (1,2 to 2 Bio €)

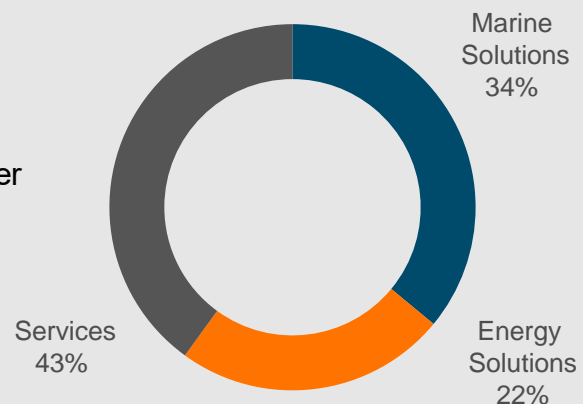
SMALL SCALE LNG
INTERGAS – LNG FOCUS
Alexandre Eykerman, VP LNG Solutions
November 2016



This is Wärtsilä



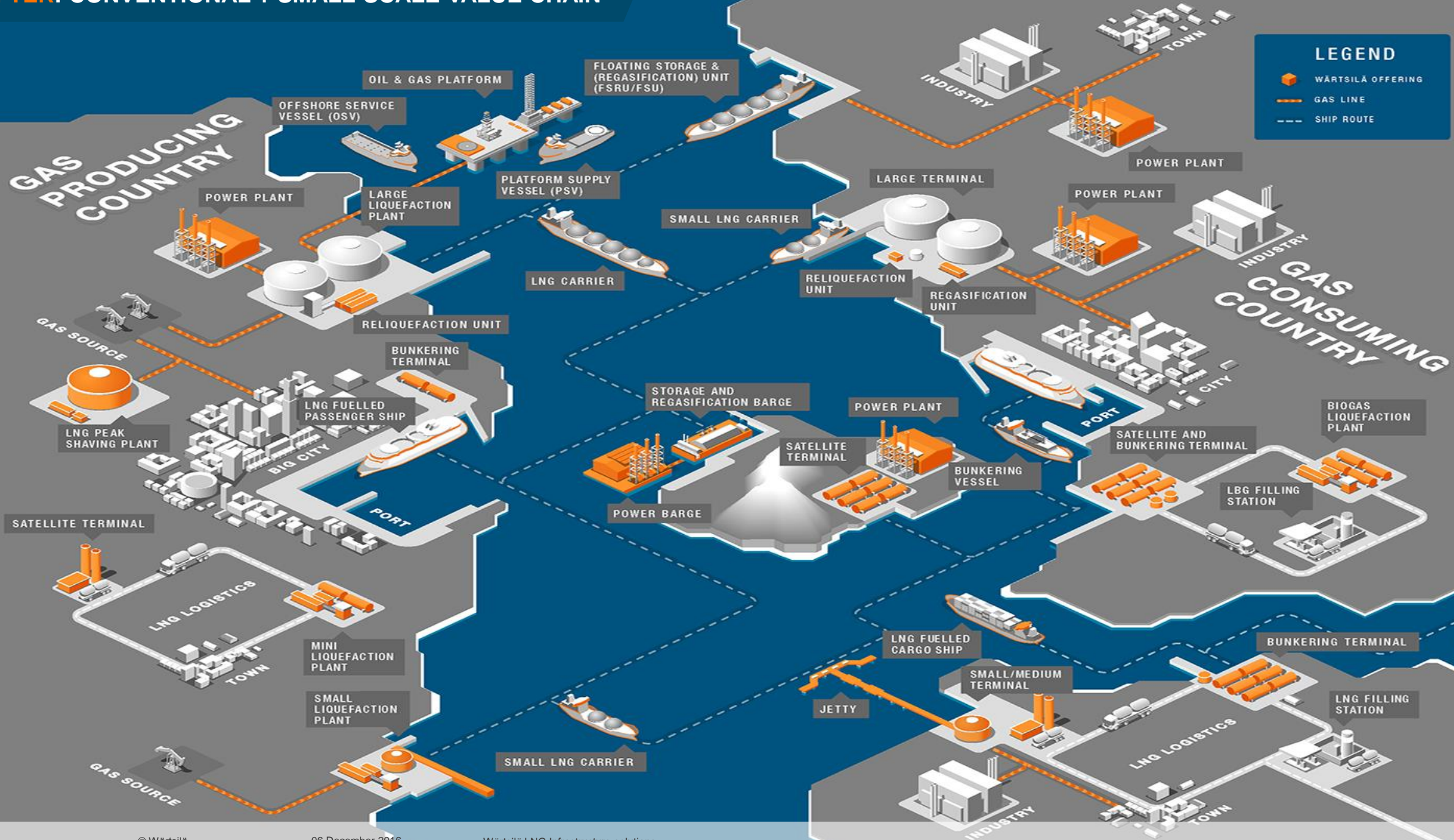
Net sales by business 2015
Listed in Helsinki
5.0 billion € turnover
Solid financial standing



BEFORE: CONVENTIONAL LNG VALUE CHAIN



AFTER: CONVENTIONAL + SMALL-SCALE VALUE CHAIN





(L) Liquefaction Plants

(T) Terminals

Mini



L1

Small



L2

Medium/Large

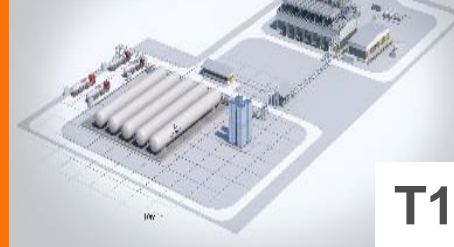


Equipment only
Power Plant

L3

Peak shaving / Storage

Satellite terminals
for gas power plants

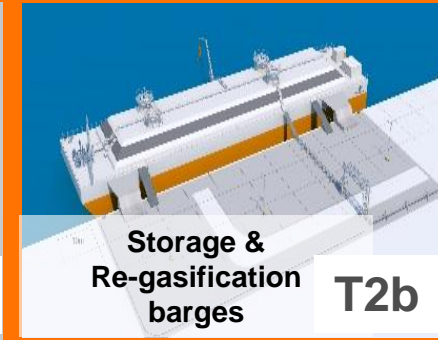


T1



Small satellite
terminals

T2a



Storage &
Re-gasification
barges

T2b



Medium-scale
terminals

T3



Large-scale terminals

Equipment only
Reliq unit & Power Plants

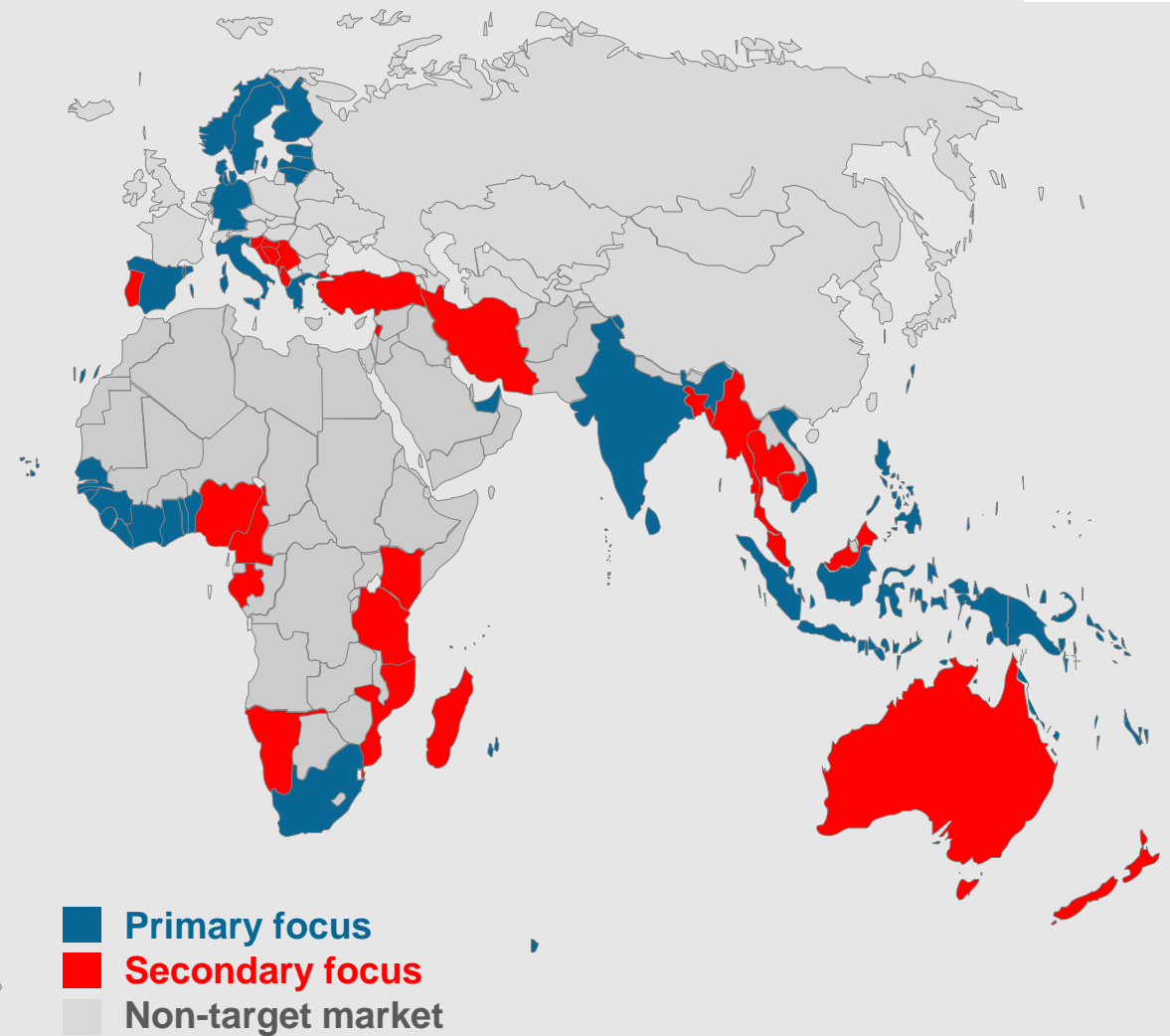


Floating Storage &
Re-gasification Units
(FSRU)

Equipment only
Regas unit

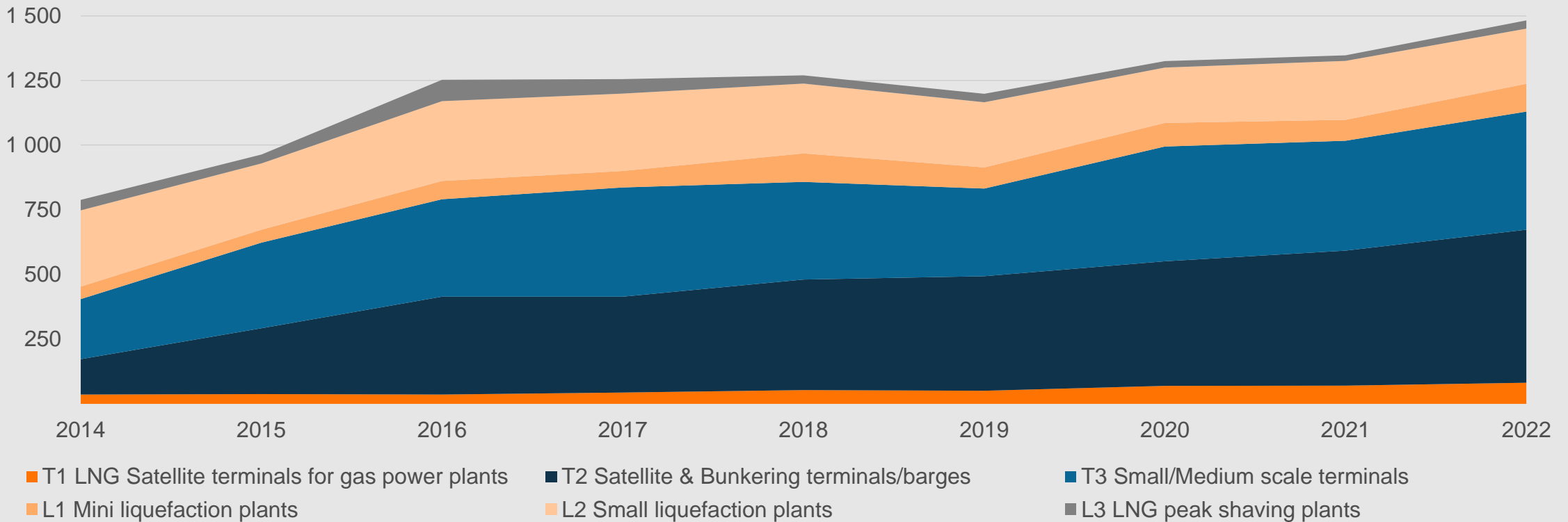
Main focus :

- Island nations
- Less populated areas without access to gas pipelines
- Areas with unreliable service by gas pipelines during peak periods
- Areas where gas-fired power plants are needed to supplement intermittent renewable energy



Investments in small-scale LNG projects are expected to grow

Small-scale LNG project investments per segment, excluding China (MEUR)



Sources: Visiongain, Transparency market research & Wärtsilä in-house market study

m³ LNG
60000

Minimum
refilling interval

50000

200 MW plant (baseload 8,000 h/year)
620,000 m³/year (=280,000 tonnes/year)

40000

100 MW plant (baseload 8,000 h/year)
310,000 m³/year (=140,000 tonnes/year)

30000

50 MW plant (baseload 8,000 h/year); OR
100 MW (flexible baseload = 4,000 h/year); OR
200 MW (peak load = 2,000 h/year)
155,000 m³/year (=70,000 tonnes/year)

20000

10000

0

0 5 10 15 20 25 30

Days of storage



LNG INFRASTRUCTURE

THANK YOU



ENGINE POWER PLANTS



SOLAR PV AND ENGINE-SOLAR HYBRID POWER PLANTS