

# Company Presentation

1 June 2022



NORSK TITANIUM

# We are innovating the future of metal alloy manufacturing



## Forging then

High labor and energy input



## Forging now

High capital and energy input



## Rapid Plasma Deposition® (RPD®)

Disruptive technology

# A parts manufacturer with proprietary additive technology



## Energy Intensive Forming Methods

Casting, Forging, or Milled Plate



*70% raw material reduction*



*Standard machining*



**12:1**  
Raw material to  
final part ratio



**4:1**  
Raw material to  
final part ratio

## Additive RPD® Technology



*Near net shape  
value-added form*

# Inserting 3D printed parts in existing industrial supply chains



## Superior product offering

- Global technology leader in metal 3D printing
- Faster and cheaper with less waste and emissions
- Proven ability to adapt to industry standards

## Solid platform for growth

- Unique position in the highly regulated Commercial Aerospace market
- Ample 3D-printing capacity in US and Norway across 35 RPD® machines

## Commercial expansion underway

- Rapidly expanding beyond Commercial Aerospace to Defense and Industrial markets
- Investing in material qualifications and test programs to unlock long-term revenue streams

up to **50%**  
Cost savings

**700 MT**  
Production capacity

**USD 150m**  
Revenue target 2026



# Global technology leader additive manufacturing for metals

NORSK  
TITANIUM

## Material specifications

Superior metallurgy published by SAE<sup>1</sup> and AMS<sup>2</sup>



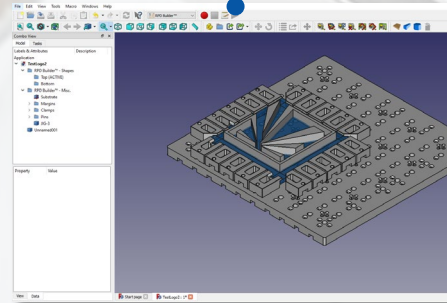
## State-of-the-art machines

Strong global patent portfolio  
Machine-to-machine qualification



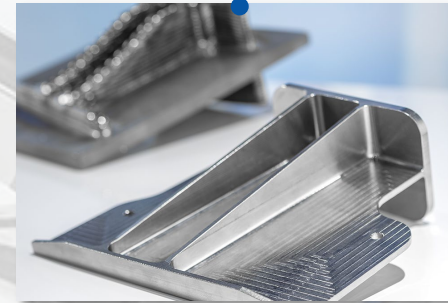
## Innovative RPD Builder™

Software Development Kit enabling customers to independently design parts



## Data platform driving automation

Quality assurance and distributed production



## Driving Industry 4.0

Scale to produce cheaper parts in custom batches



1) Society of Automotive Engineers (SAE)  
2) Aerospace Material Specification (AMS)





700 MT annual  
capacity ready  
for production

### Plattsburgh, New York, USA

- World's largest 3D printing facility, focused on manufacturing customer parts
- 620 MT annual capacity across 31 RPD® machines
- Separate qualification facility for Defense

### Eggemoen, Ringerike, Norway

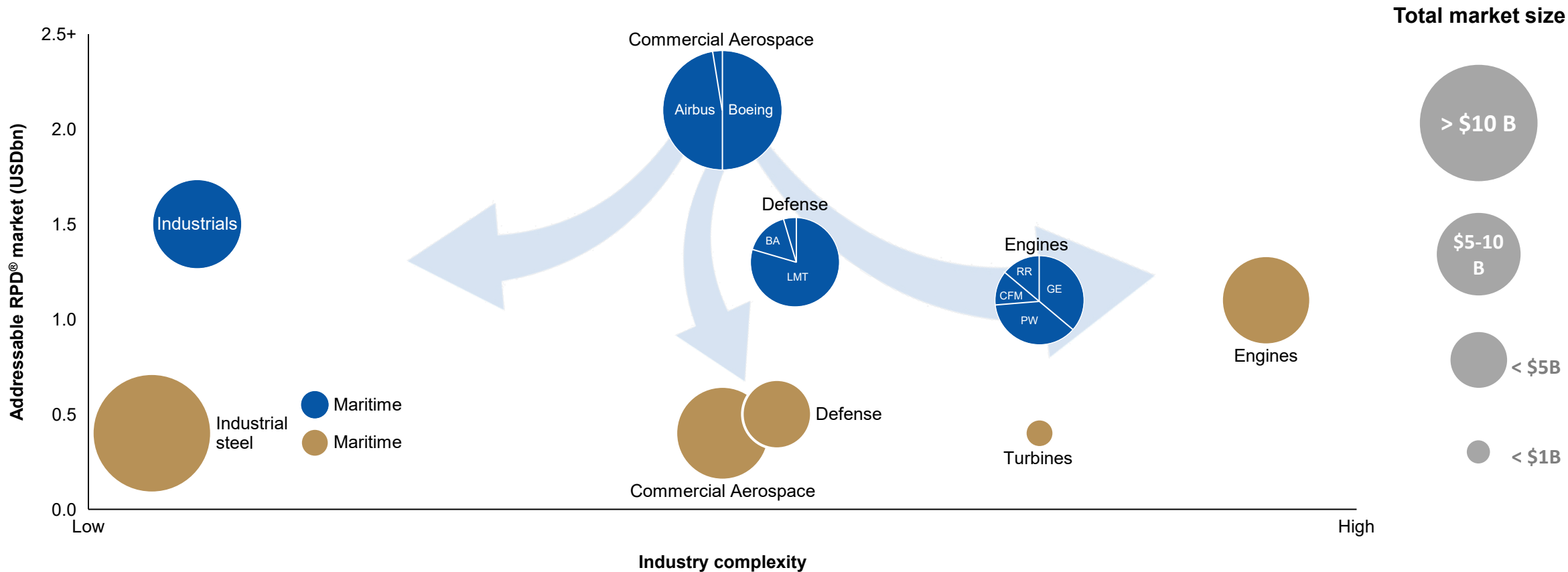
- Focused on research and development of new technologies for 3D printing
- 80 MT annual capacity across 4 RPD® machines
- Own metallurgy lab

# Commercial aerospace enables us to go anywhere



## Large potential market for 3D printed parts

● Ti6-4, Titanium Alloys    ● Other Alloys



Source: Management estimates  
1) Defense Ti6-4: LMT=Lockheed Martin, BA=Boeing  
2) Engines Ti6-4: GE=General Electric, RR=Rolls-Royce, CFM= CFM International, PW=Pratt & Whitney

# Our 3D printed Titanium parts already up and flying



## Established in Commercial Aerospace

Established in Commercial Aerospace

Aerospace Materials Specification (AMS)  
7004 / 7005



Boeing  
Material  
Certification

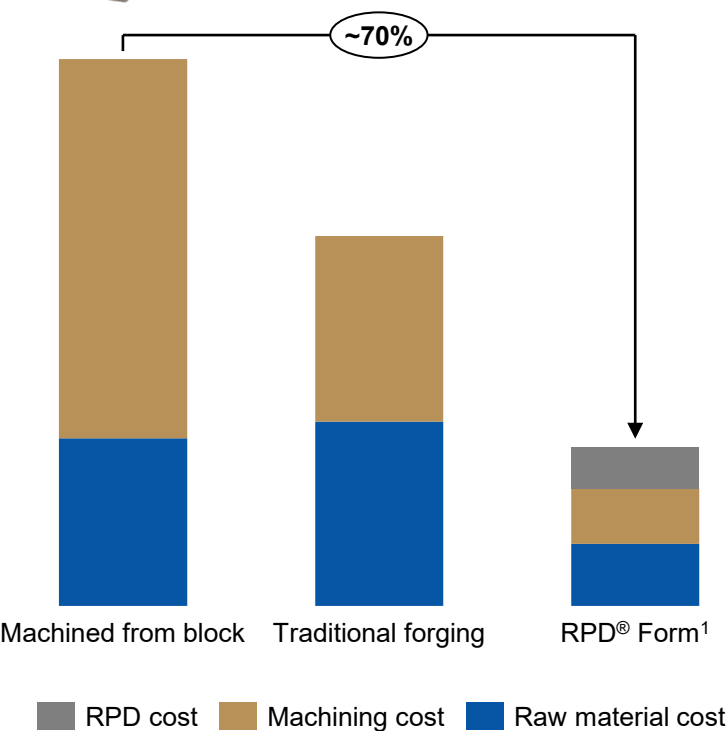


Boeing 787



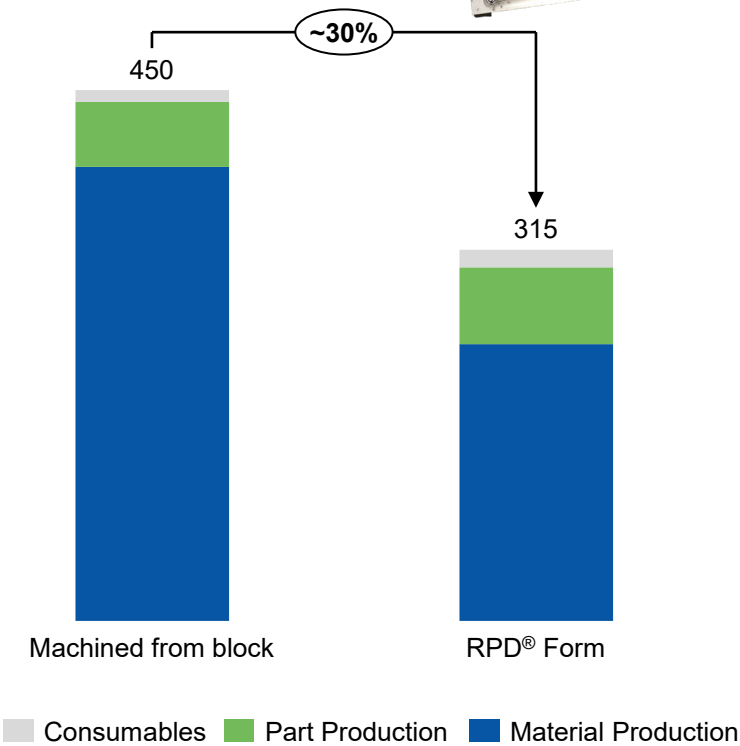
Airbus  
Material  
Certification

## Cost reduction - illustration



## Environmental impact reduction

CO2 emissions (kg/part) overall<sup>2</sup>





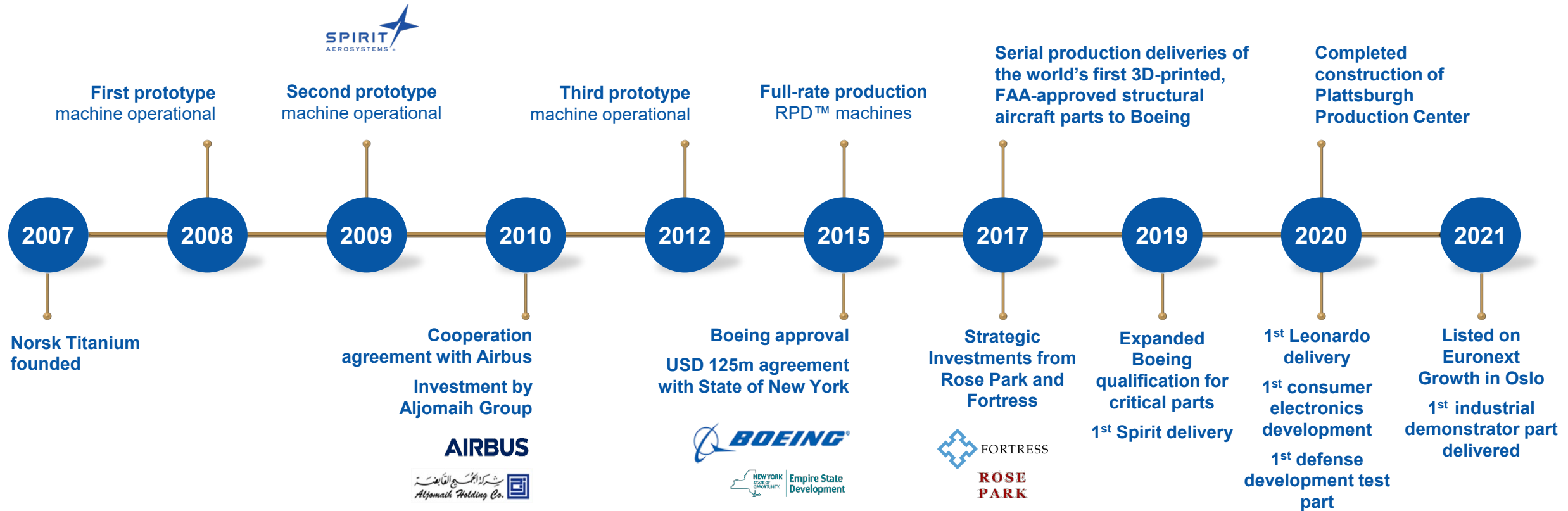


2021 – 2022

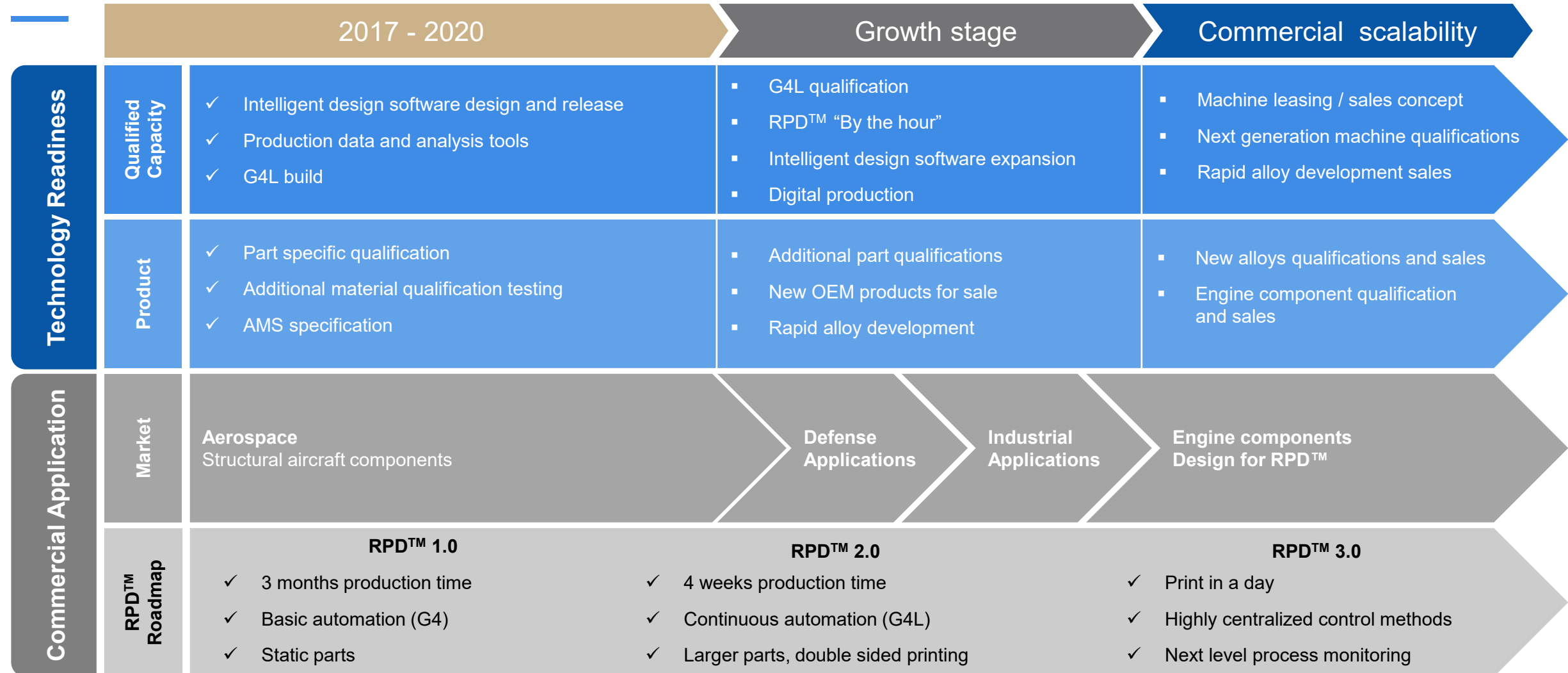
## Expansion beyond Commercial Aerospace

- 120 kg demonstrator RPD part delivered to Hittech for a semiconductor manufacturing machine component
- Developing material specification for two US Defense prime contractors for aircraft structural components
- Delivered demonstrator parts to US Defense prime contractors for aircraft structural components
- Surveying adjacent market applications with customers

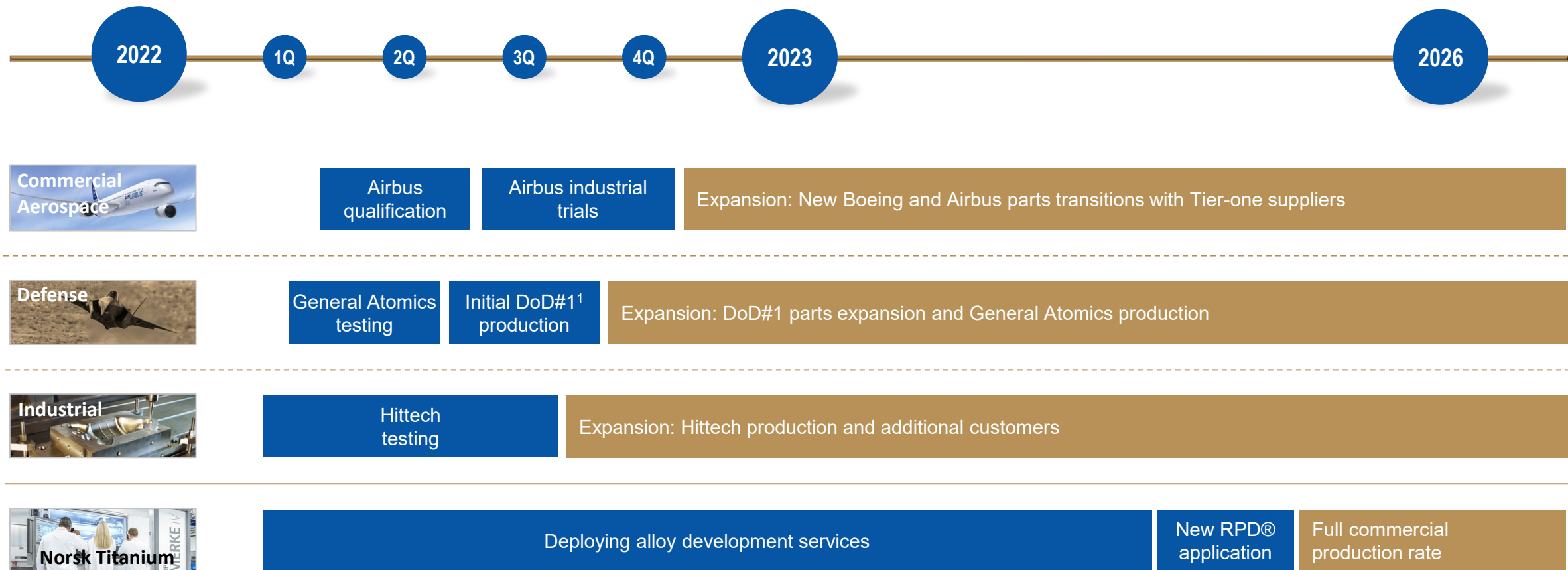
# Matured RPD<sup>®</sup> technology setting industry standards



# Well defined and structured path to diverse growth



# Successfully expanding our technology to new industries



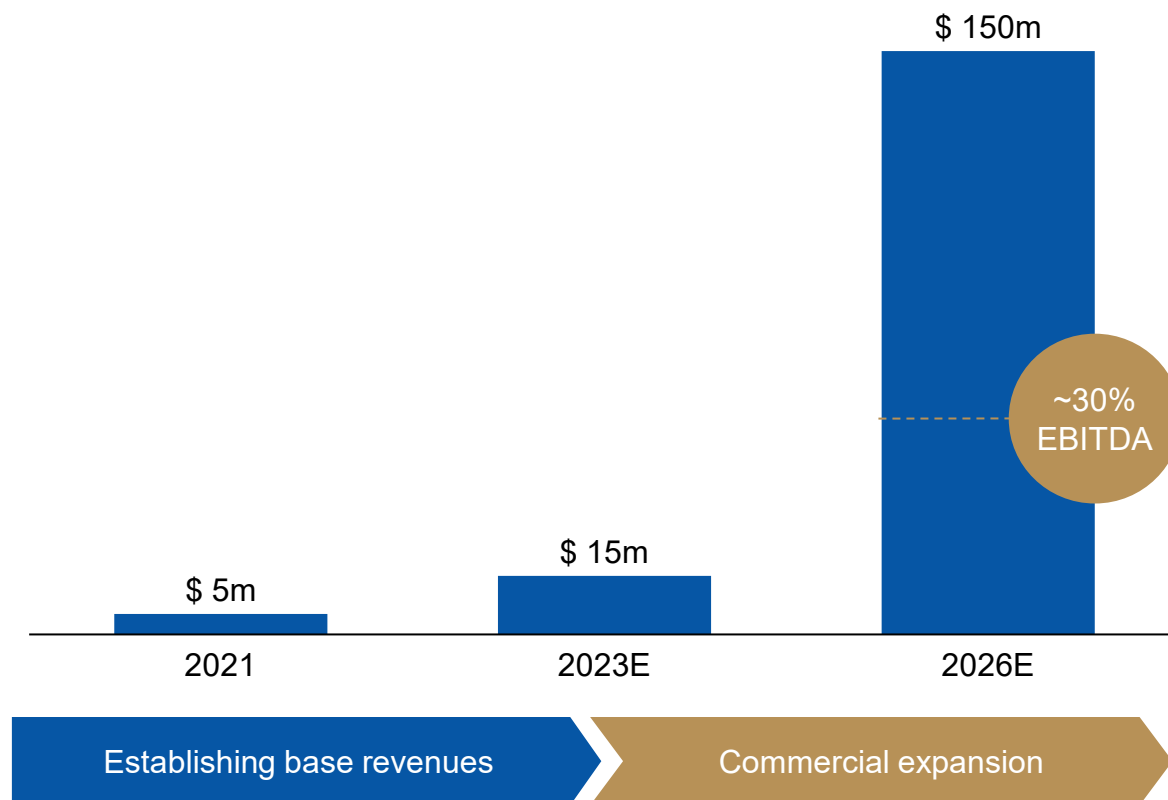
1) DoD = US Department of Defense, Undisclosed customer names



# Progressing towards long-term targets



## Long-term revenue targets



Revenue expansion pending product qualifications, contract awards and deliveries of produced parts

- Technology adoption by 2023
  - Revenue from programs currently in development and qualification
- Mass additive manufacturing by 2026
  - Expansion within Commercial Aerospace, Defense and Industrial industries
  - Utilizing only ~50% of current capacity

Establishing a long-term target EBITDA margin of ~30% beyond commercialization



# Delivering on strategy

## Superior product offering

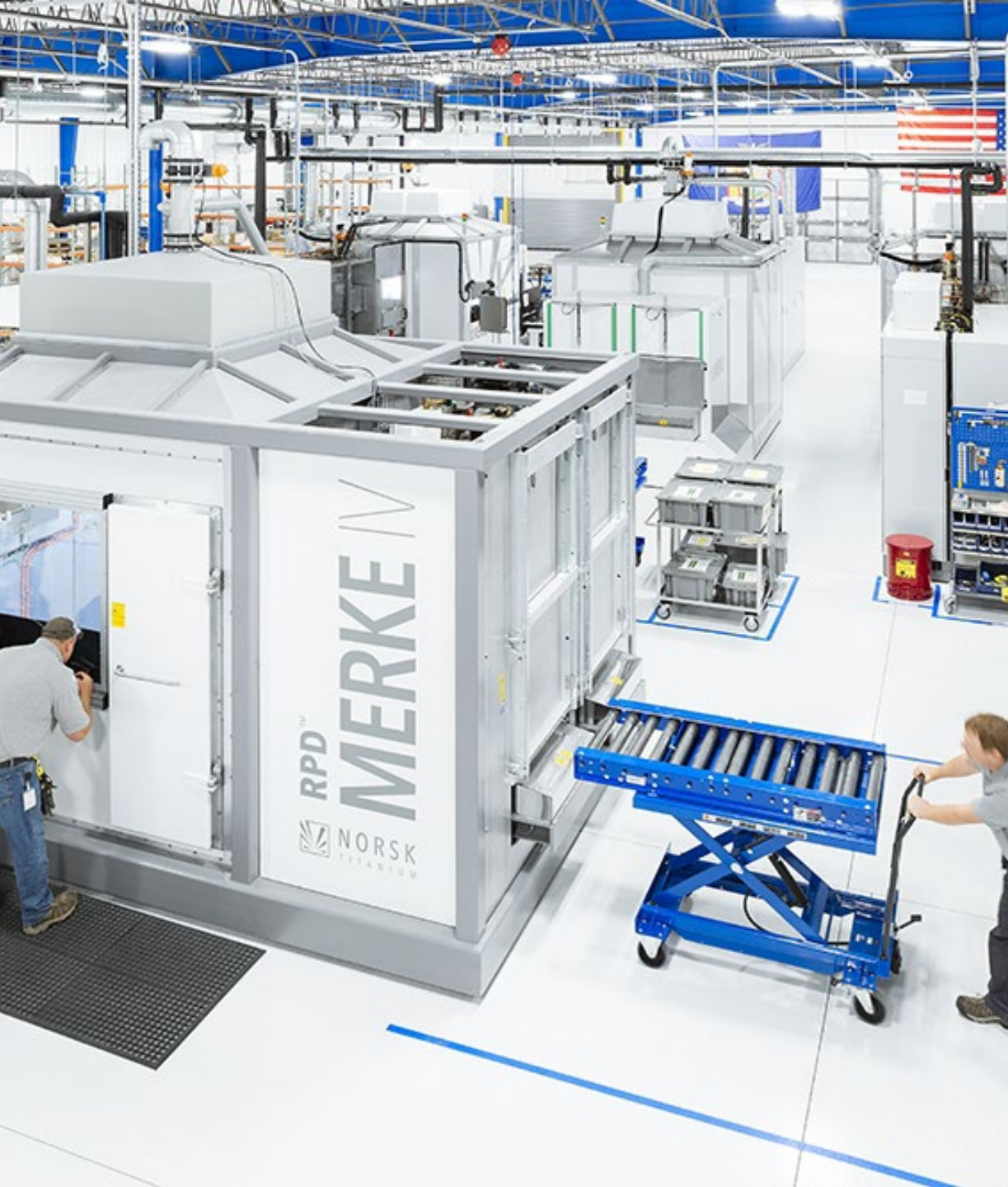
- Developing to maintain position as technology leader
- 100% on-time deliveries and operational excellence

## Solid platform for growth

- No need for further investments in machinery
- Proof-of-Concept in the highly regulated Commercial Aerospace industry
- 148 patents with 21 new patents awarded in 2H'21

## Commercial expansion

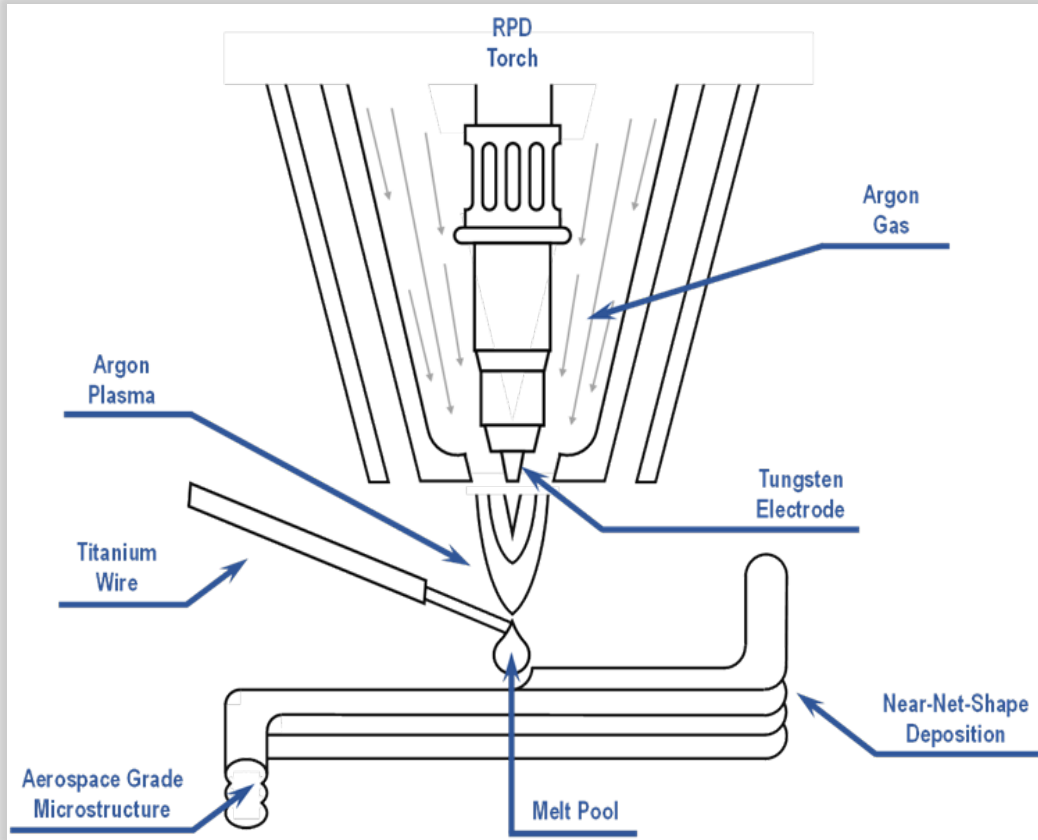
- Rapid pace of technology adoption in Defense and Industrial industries
- Airbus first parts in industrial trials in 2022
- Investing in qualification programs to secure long-term revenue streams



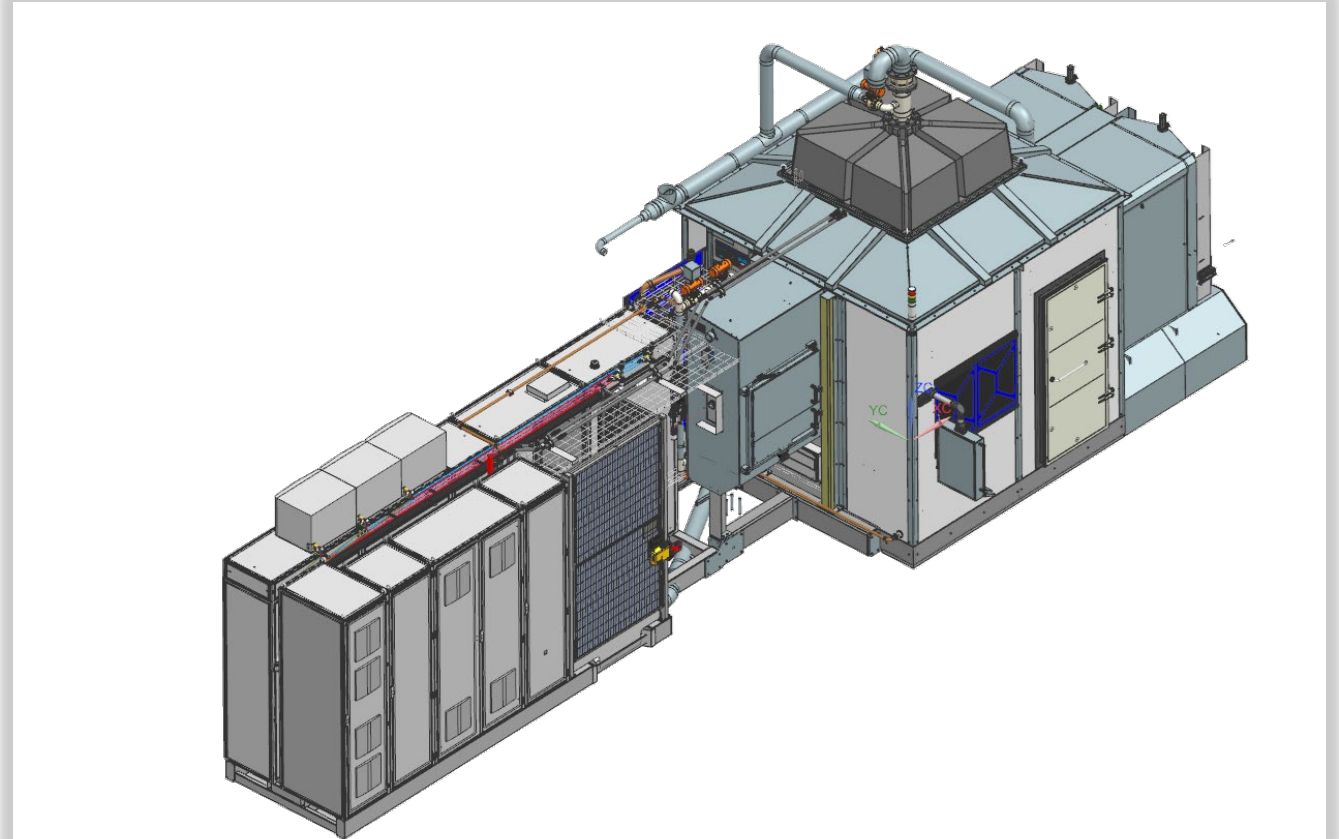
# Appendix

# Norsk's Rapid Plasma Deposition (RPD™) technology

## Norsk's RPD™ process



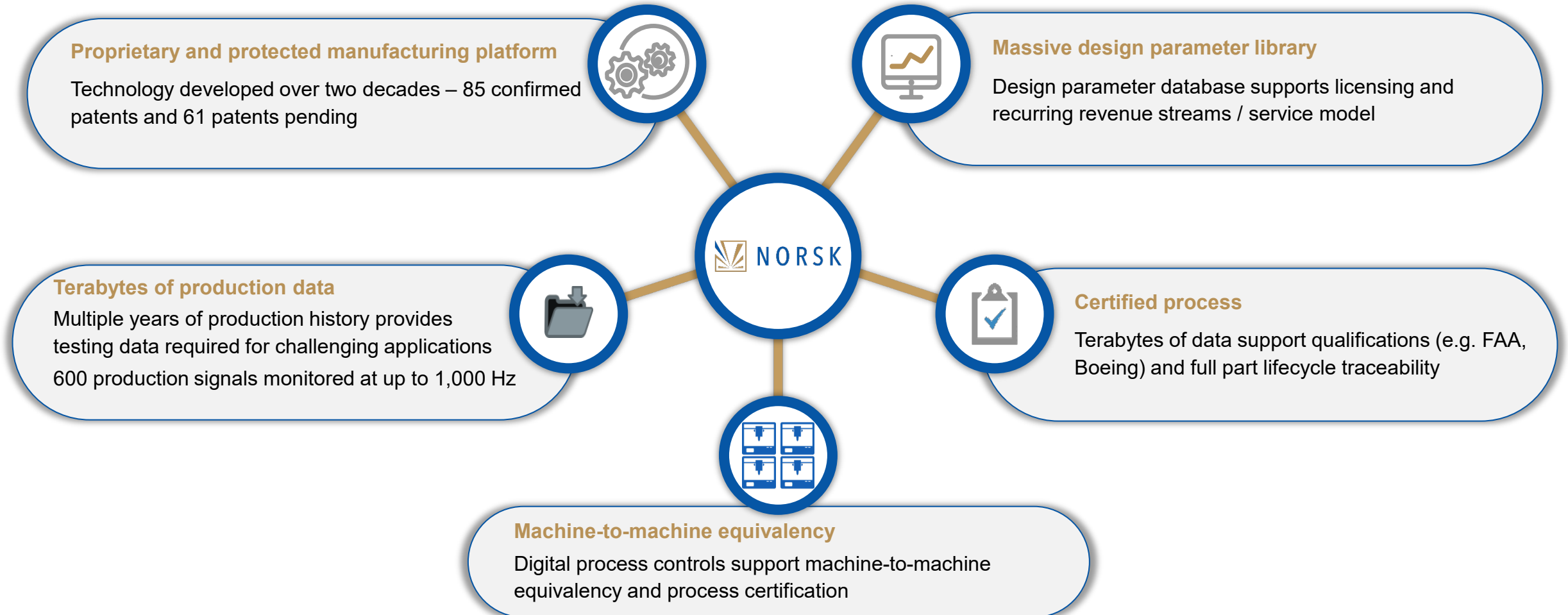
## Norsk's proprietary MERKE IV machine






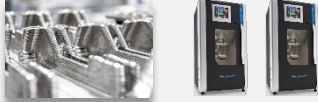










# Technology platform enabled by a digital backbone

## Digital backbone enabling a highly scalable business model



# RPD<sup>®</sup> is benefits versus other technologies



<b>Rapid Plasma Deposition</b> (4 : 1)	<p>Low-cost titanium wire and plate feedstock</p>  <p>4 kg raw input</p> <p>RPD™ printer yields near net shape with less CNC machines required</p>  <p>Batch of finished parts completed</p>  <p>1 kg final part</p>	<ul style="list-style-type: none"> <li>✓ Homogenous material quality</li> <li>✓ High-rate serial production (5-10kg/hr)</li> <li>✓ Lower capital and tooling cost</li> <li>✓ Just-in time manufacturing</li> <li>✓ Mass customization</li> <li>✓ 30+% lower carbon footprint</li> </ul>
<b>Traditional metal 3D printing</b> (1.5 : 1)	<p>Most 3D printers start with expensive powder (\$150-600/kg)</p>  <p>1.5 kg raw material input</p> <p>Slow rate printers sufficient only for rapid prototyping</p>  <p>Slow rate print</p> <p>Printer outputs a finished part</p>  <p>1 kg final part</p>	<ul style="list-style-type: none"> <li>✓ Complex finished part</li> <li>✓ Smaller carbon footprint</li> <li>✗ No serial production</li> <li>✗ Inconsistent material quality</li> <li>✗ Slow print rate (0.1-1.0 kg/hr)</li> <li>✗ Lack industrial scale</li> </ul>
<b>Traditional titanium forging</b> (12 : 1)	<p>Forging starts with a block</p>  <p>12 kg raw input</p> <p>Forged using a &gt;\$95m press and CNC machines removing material</p>  <p>Only 8% of the block remains in the finished part</p>  <p>1 kg final part</p>	<ul style="list-style-type: none"> <li>✓ Homogenous material quality</li> <li>✓ Scalable serial production</li> <li>✗ Extremely high capital and tooling cost</li> <li>✗ Inflexible, long lead times</li> <li>✗ Costly material waste</li> <li>✗ Significant carbon footprint</li> </ul>
<b>Traditional titanium machining</b> (12 : 1)	<p>Machining starts with Ti block</p>  <p>12 kg raw input</p> <p>Large number of CNC machines used to remove material</p>  <p>Only 8% of the block remains in the finished part</p>  <p>1 kg final part</p>	<ul style="list-style-type: none"> <li>✓ Homogenous material quality</li> <li>✗ Slow, long lead times</li> <li>✗ Costly material waste</li> <li>✗ Significant carbon footprint</li> <li>✗ High capital and tooling cost</li> </ul>

# Substantial reduction in unit costs compared to incumbent production methods

## Finished product



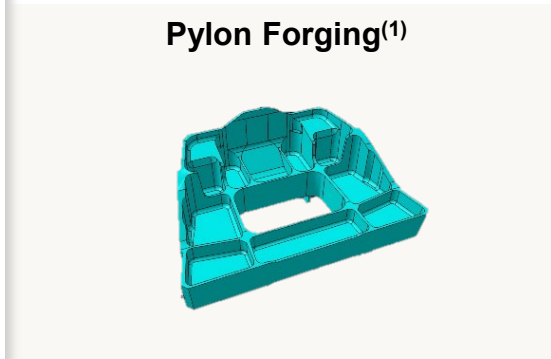
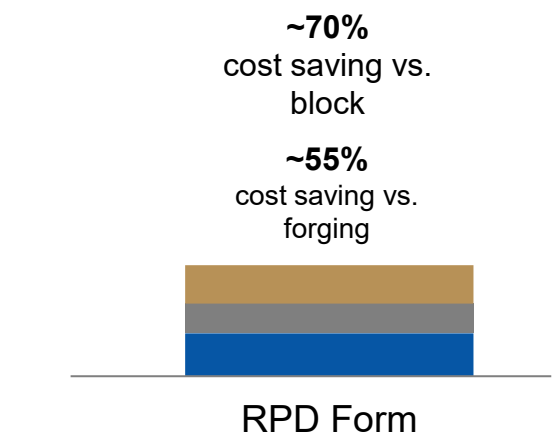
**Fly Weight = 1**



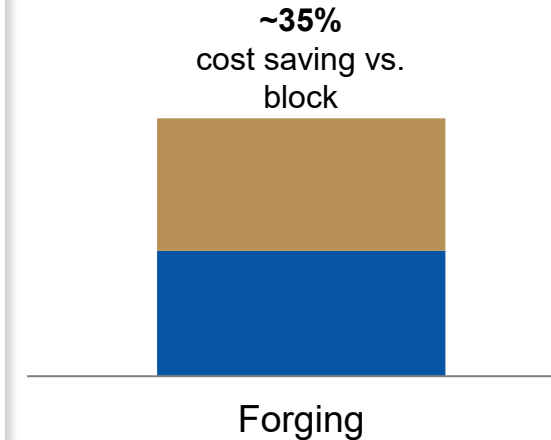
## Production methods



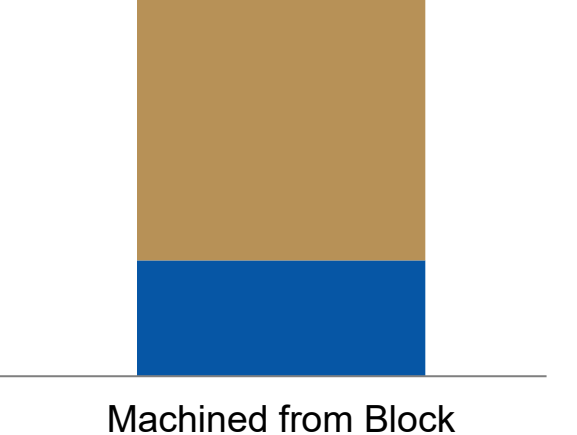
**3 : 1**



**7 : 1**



**12 : 1**



# Norsk's technology is certified for production and has set industry standard for 3D printing of metals

## Industry material standard

Boeing Material



*"We are always looking at the latest technologies to drive cost reduction, performance, and value to our customers, and Norsk Titanium's RPD™ capability fits the bill in a new and creative way."*

John Byrne, VP Airplane Materials & Structures, Boeing

Airbus Material



Emerging Technologies  
Task Group, Co-Chair  
Materials & Machines



Aviation Week  
2018 Award Winner



AMS  
7004 & 7005



Additive Material  
Specification Development  
Committee



American Welding Society



Standards Worldwide

Frost & Sullivan  
2017 European Innovation  
Award





# State-of-the-art facilities located in Plattsburgh, NY State

Plattsburgh Production Center (PPC)



Plattsburgh Development and Qualification Center (PDQC)



# Partnerships with industry-leading companies and institutions

## Customers



## Development partners



## Parts supply chain partners





# Agreement with New York State will support \$300M+ of Norsk's manufacturing revenues

## NY State relationship

- Fort Schuyler Management Corporation (FSMC) has funded a \$125M capital investment from New York State for Norsk
- The funding has been used to purchase \$75M of equipment and to outfit two Norsk production facilities worth \$50M
- Almost all of the capital has been successfully deployed and is supporting Norsk's active production facilities, all of which are available for operation



“  
Now, Norsk Titanium has groundbreaking technology ... Norsk Titanium **manufactures products less expensive... very little waste.**  
*Governor Andrew M. Cuomo, New York*  
”

## Norsk's history with NY State

2015



Alliance agreement

2016



Master Equipment Purchase Agreement

2017



Amendment to Master Equipment Purchase Agreement

2020



Completion of the Plattsburg development center

# Reported financials



## Half year consolidated statement of profit and loss

	Second half	Second half	Full year	Full year
unaudited, in USD thousand	2021	2020	2021	2020*
Revenue	1,011	230	1,267	357
Other income	1,415	579	3,985	619
<b>Total revenues and other income</b>	<b>2,427</b>	<b>809</b>	<b>5,252</b>	<b>977</b>
Raw materials and consumable used	(2,388)	(1,930)	(3,748)	(3,891)
Employee benefits expense	(5,921)	(9,229)	(12,586)	(13,741)
Other operating expenses	(2,657)	(4,003)	(5,676)	(10,645)
Depreciation and amortisation	(1,931)	(1,550)	(3,369)	(2,968)
<b>Operating profit</b>	<b>(10,471)</b>	<b>(15,903)</b>	<b>(20,128)</b>	<b>(30,269)</b>
Financial income	5,852	(5,390)	8,613	17,458
Financial expenses	(2,830)	1,001	(4,572)	(30,024)
<b>Profit or loss before tax</b>	<b>(7,449)</b>	<b>(20,292)</b>	<b>(16,087)</b>	<b>(42,835)</b>
Income tax expense	105	(20)	94	(62)
<b>Profit or loss for the year</b>	<b>(7,344)</b>	<b>(20,312)</b>	<b>(15,993)</b>	<b>(42,896)</b>

\*Audited



# Reported financials



## Statement of financial position: Assets

unaudited, in USD thousand	31 December 2021	30 June 2021	31 December 2020*
<b>ASSETS</b>			
<b>Non-current assets</b>			
Deferred tax asset	24		
Right of use of assets	501	731	1,202
Property, plant and equipment	4,080	4,543	4,859
Intangible assets	6,358	7,654	8,202
<b>Total non-current assets</b>	<b>10,962</b>	<b>12,929</b>	<b>14,264</b>
<b>Current assets</b>			
Inventories	5,166	4,788	4,724
Trade receivables	389	350	787
Other current assets	2,536	1,164	961
Cash and cash equivalents	22,932	35,150	2,196
<b>Total current assets</b>	<b>31,023</b>	<b>41,452</b>	<b>8,669</b>
<b>TOTAL ASSETS</b>	<b>41,985</b>	<b>54,381</b>	<b>22,933</b>

\*Audited

## Statement of financial position: Equity and Liabilities

unaudited, in USD thousand	31 December 2021	30 June 2021	31 December 2020*
<b>EQUITY AND LIABILITIES</b>			
<b>Equity</b>			
Share capital	2,005	2,005	464
Share premium	48,627	48,627	0
Treasury shares	0	0	(10)
Other capital reserves	(908)	(997)	0
Other equity	(15,622)	(4,357)	(80,975)
<b>Total equity</b>	<b>34,102</b>	<b>45,278</b>	<b>(80,521)</b>
<b>Non-current liabilities</b>			
Deferred tax	0	0	0
Non-current lease liabilities	221	364	513
Long term liabilities	897	992	1,022
Derivative financial liabilities	0	0	0
Loan measured at fair value	0	0	0
<b>Total non-current liabilities</b>	<b>1,118</b>	<b>1,356</b>	<b>1,535</b>
<b>Current liabilities</b>			
Trade and other payables	1,297	2,054	1,608
Current interest bearing debt	17	31	21,195
Current loan measured at fair value	0	0	69,106
Contract liability	4,068	4,072	3,927
Current lease liabilities	387	501	843
Other current liabilities	1,029	1,091	5,192
Tax payable	(33)	(2)	47
<b>Total current liabilities</b>	<b>6,764</b>	<b>7,746</b>	<b>101,918</b>
<b>Total liabilities</b>	<b>7,882</b>	<b>9,102</b>	<b>103,453</b>
<b>TOTAL EQUITY AND LIABILITIES</b>	<b>41,985</b>	<b>54,381</b>	<b>22,933</b>

\*Audited

# Reported financials



## Statement of cash flow

	Second half	Second half	Full year	Full year
unaudited, in USD thousand	2021	2020	2021	2020*
<b>Cash flows from operating activities</b>				
Profit before tax	(7,449)	(20,292)	(16,087)	(42,835)
<i>Adjustments to reconcile profit before tax to net cash flow:</i>				
Depreciation and amortisation	1,931	1,550	3 369	2,968
Net financial income/expense included in financing activities	17	5,942	1 336	14,569
Net foreign exchange differences	(3,039)	(1,553)	(5,377)	(2,003)
Tax payable	35	(93)	(11)	(182)
	0	0		
<i>Working capital adjustment:</i>	0	0		
Changes in inventories and right of use assets	(147)	730	261	(8)
Changes in trade and other receivables	(39)	(776)	397	120
Changes in other current assets**	(1,372)	97	(1,575)	615
Changes in trade and other payables	(757)	(578)	(311)	(782)
Changes in other accruals	(174)	259	(2,501)	212
<b>Net cash flows from operating activities</b>	<b>(10,994)</b>	<b>(14,713)</b>	<b>(20,499)</b>	<b>(27,325)</b>
<b>Cash flows from investing activities</b>				
Purchase of property, plant and equipment	(699)	(652)	(951)	(372)
Investment in intangible assets	338	(1,166)	257	(358)
Interest received	4	1	65	7
<b>Net cash flow from investing activities</b>	<b>(357)</b>	<b>(1,816)</b>	<b>(629)</b>	<b>(724)</b>
<b>Cash flow from financing activities</b>				
Proceeds from issuance of shared capital	0	0	38,374	0
Purchase of treasury shares	0	(22)	(2)	(22)
Sale of treasury shares	0	0	783	0
Payment of principle portion of lease liabilities	(281)	(415)	(807)	(853)
Increase of debt	0	17,226	6,000	29,192
Repayment of debt	(14)	(80)	(1,828)	(80)
Interests paid	(19)	(198)	(88)	(198)
<b>Net cash flow from financing activities</b>	<b>(314)</b>	<b>16,510</b>	<b>42,433</b>	<b>28,039</b>
Net change in cash and cash equivalents	(11,665)	(19)	21,305	(10)
Effect of change in exchange rate	(554)	246	(570)	62
Cash and cash equivalents, beginning of period	35,150	1,969	2,196	2,145
<b>Cash and cash equivalents, end of period</b>	<b>22,931</b>	<b>2,196</b>	<b>22,931</b>	<b>2,196</b>

\*Audited

\*\* Accrual for Innovation Norway and Skattefunn of USD 1,347 thousand is reflected in the Other receivables of USD 2,487 thousand.

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