

**GIOVANNI NIGRIS
EXECUTIVE VICE
PRESIDENT
DANIELI GROUP**

**IIAC 2016
IRAN INTERNATIONAL
ALUMINIUM CONFERENCE
11-12 MAY 2016
TEHRAN, IRAN**

EXCELLENT PERSPECTIVES FOR THE IRANIAN ALUMINUM INDUSTRY

DANIELI



**DANIELI / SINCE 1914
PASSION TO INNOVATE
AND PERFORM
IN THE METALS INDUSTRY**

- 1 **WORLD ALUMINIUM
OUTLOOK**
- 2 **ALUMINIUM PRODUCTION
IN IRAN:
KEYS OF SUCCESS**
- 3 **EXPANSION PLANS
OF THE IRANIAN
ALUMINIUM INDUSTRY**
- 4 **TECHNOLOGIES
TO COMPETE WITH**
- 5 **DANIELI PERSIA
MANUFACTURING
AND SERVICE CENTER**
- 6 **CONCLUSIONS**

WORLD ALUMINIUM OUTLOOK



TRANSPORT

Body parts, sheet and other products for internal parts

HOUSING

Roof plating, building facades, canopies, doors and window frames etc

PACKAGING

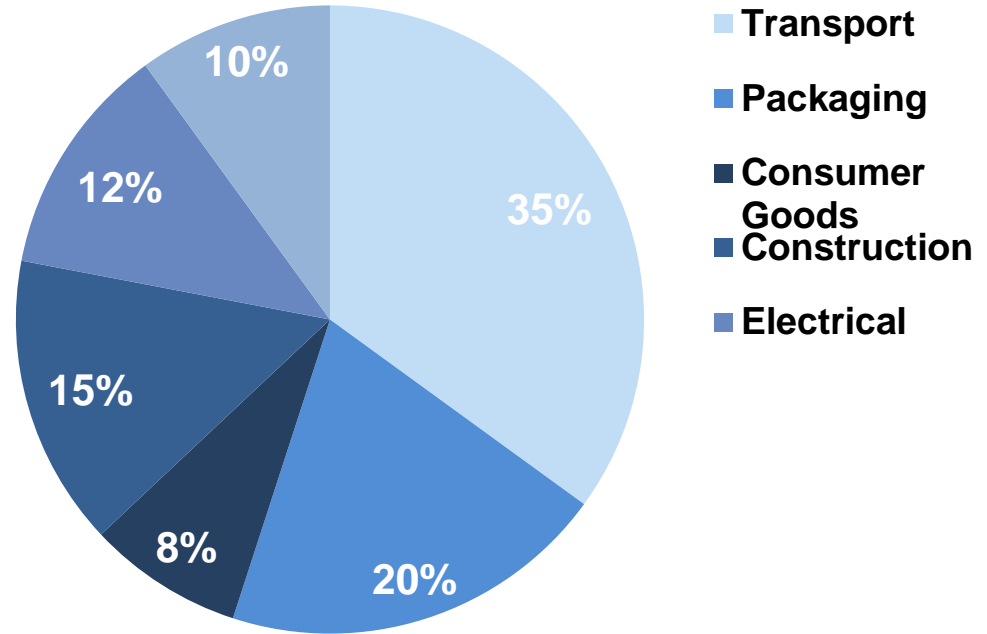
Foil, cans and other bottles

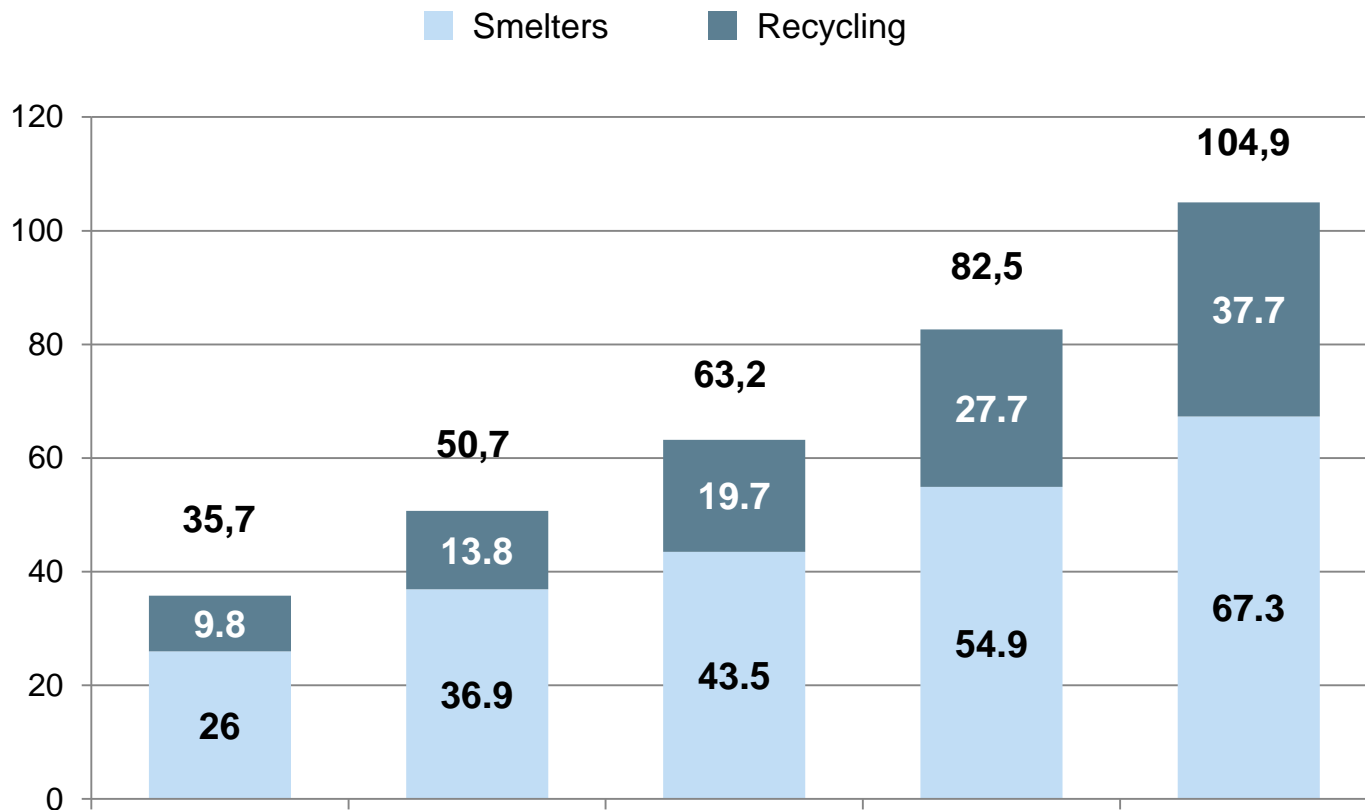
ELECTRICAL

Heavy power transmission wires, electrical poles and other forms

OTHERS

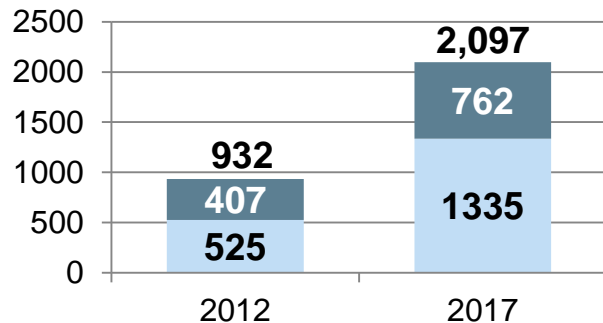
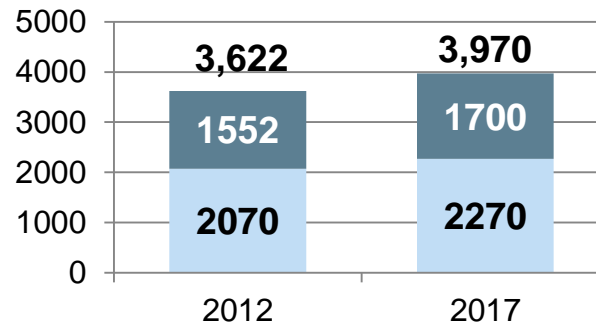
Cooking wear and other utensils etc





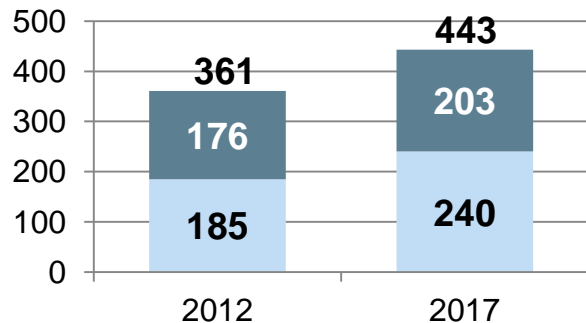
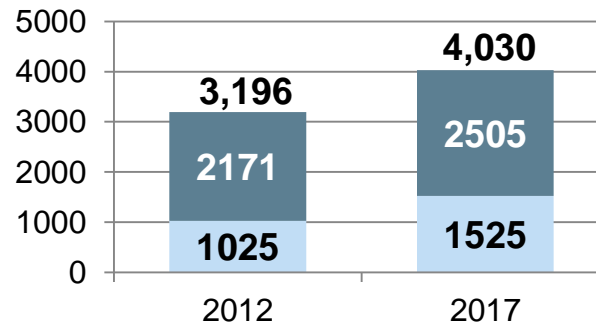
| | Global AI production | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 |
|--|-----------------------------|--------------|--------------|--------------|--------------|--------------|--------------|
| <p>The global population is expected to reach 9 billions in 2040.</p> <p>This means that aluminium demand will increase Approx to 5% per year.</p> | Africa | 1,670 | 1,675 | 1,678 | 1,684 | 1,690 | 1,700 |
| | North America | 4,448 | 4,108 | 4,083 | 4,083 | 4,100 | 4,230 |
| | Latin America | 1,319 | 1,281 | 1,315 | 1,543 | 1,582 | 1,594 |
| | Asia (ex. China) | 3,725 | 4,276 | 4,513 | 5,475 | 5,724 | 5,903 |
| | Western Europe | 3,389 | 3,401 | 3,425 | 3,425 | 3,442 | 3,480 |
| | Eastern/Central Europe | 4,285 | 4,450 | 4,631 | 4,919 | 5,124 | 5,332 |
| | Australasia | 1,969 | 1,972 | 1,972 | 1,972 | 1,975 | 1,980 |
| | China | 31,429 | 34,250 | 36,521 | 36,821 | 38,101 | 39,855 |
| | Middle East | 5,105 | 5,207 | 5,327 | 5,527 | 5,705 | 5,913 |
| | Total | 57,343 | 60,643 | 63,365 | 65,463 | 67,443 | 69,987 |
| | Year on year % change | 7.8% | 5.8% | 4.5% | 3.3% | 2.9% | 3.6% |

| | Consumption | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 |
|--|-----------------------|--------|--------|--------|--------|--------|--------|
| <p>The global population is expected to reach 9 billions in 2040.</p> <p>This means that aluminium demand will increase Approx to 5% per year.</p> | North America | 6,128 | 6,368 | 6,577 | 6,709 | 7,015 | 7,455 |
| | Latin America | 1,868 | 1,915 | 2,015 | 2,093 | 2,204 | 2,454 |
| | Asia (ex. China) | 10,054 | 10,576 | 11,127 | 11,698 | 12,267 | 12,922 |
| | Western Europe | 6,562 | 6,788 | 6,979 | 7,118 | 7,338 | 7,655 |
| | China | 29,457 | 31,725 | 33,946 | 36,017 | 38,750 | 40,335 |
| | Others | 3,006 | 3,051 | 3,138 | 3,250 | 3,505 | 3,815 |
| | Total | 57,075 | 60,423 | 63,780 | 66,885 | 71,079 | 74,636 |
| | Year on year % change | 5.4% | 5.9% | 5.6% | 4.9% | 5.9% | 4.8% |

AUTOMOTIVE: +18%**PACKAGING: +2%**

■ N. America

■ Europe

AEROSPACE: +4%**BUILDING AND CONSTRUCTION: +5%**

FORECAST 2025



18%

Numbers of vehicles with complete aluminium body structures



7 out of 10

Pickup trucks will be aluminium bodied



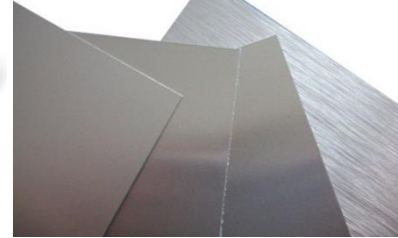
27%

Of all body and closure parts for light vehicles made of aluminium



Aluminium hood penetration will reach 85%

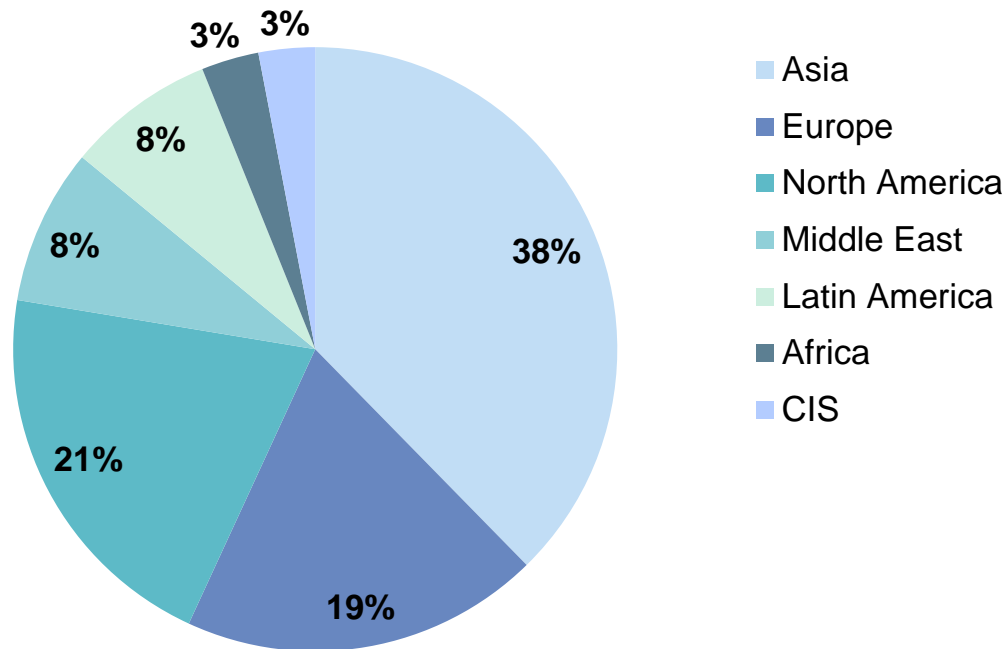
Doors will reach 46%



Use of aluminium sheet for vehicle bodies to increase to 7% per year

GLOBAL AIRCRAFT FLEET

Globally **38,050** aircraft deliveries are going to be done in **20 years** between **2015-2034**.

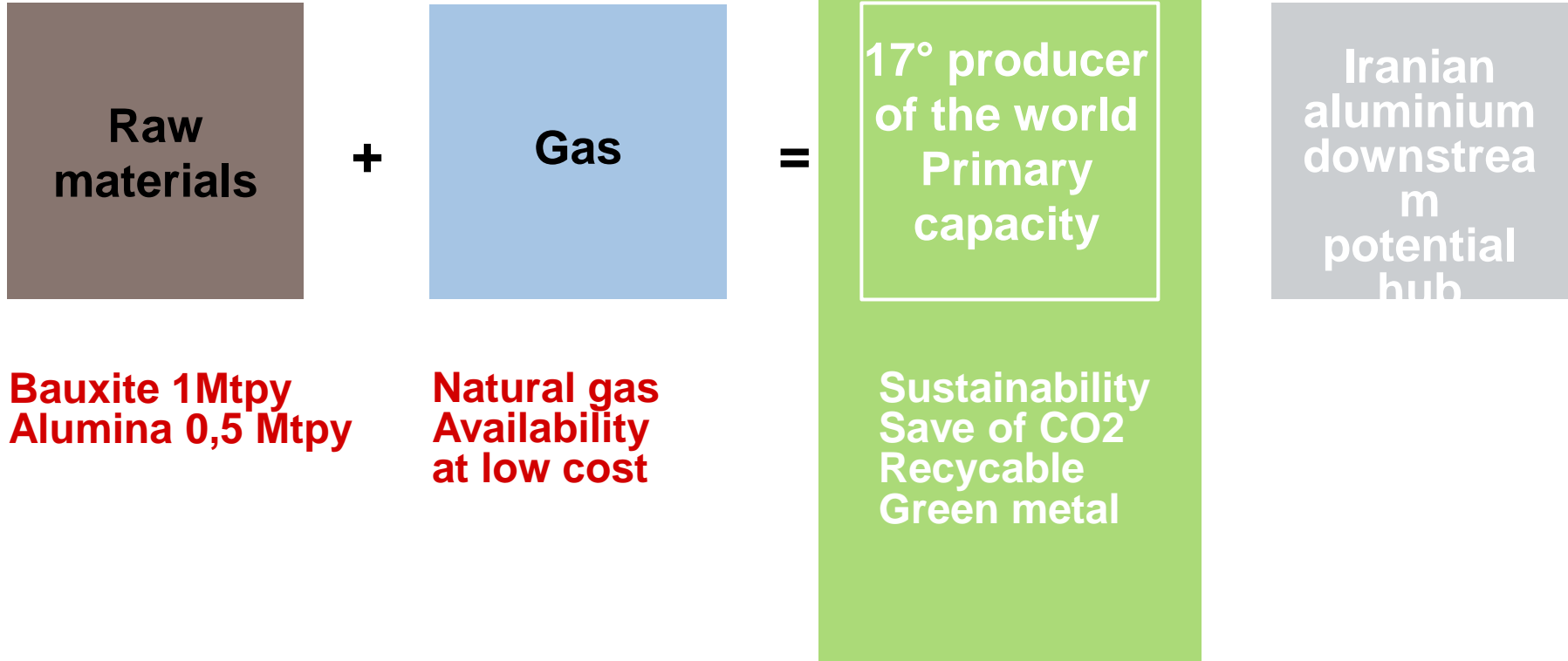


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ALUMINIUM PRODUCTION IN IRAN: KEYS OF SUCCESS

WHY

- > **Broad domestic industrial base**
- > **Educated and motivated workforce**
- > **Cheap labor and young population**
- > **Cheap energy**
- > **Geographical location: access to Caspian, Persian Gulf and eastern countries' markets**
- > **GDP approx 40% industry, 50% services**
- > **Industry and services annual average growth of 10%**



IRAN

-15%

CHINA

IRAN

-25/30%

EUROPE

IRAN

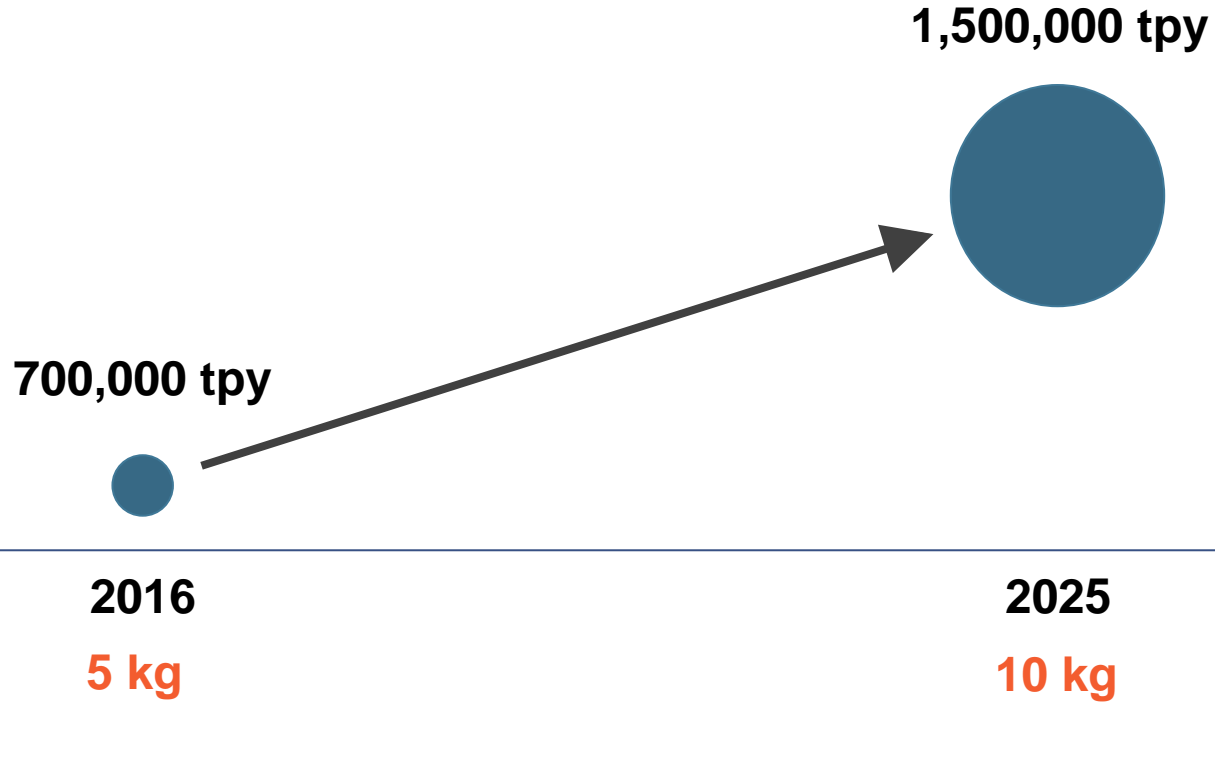
-25/30%

USA



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EXPANSION PLANS OF THE IRANIAN ALUMINIUM INDUSTRY



PRIORITY

Pharmaceutical packaging
Wrinkle wall containers
Laminated products
Lithographic sheet
Beverage can
Food packaging
Painted sheet
Heat exchangers



POTENTIAL

Automotive

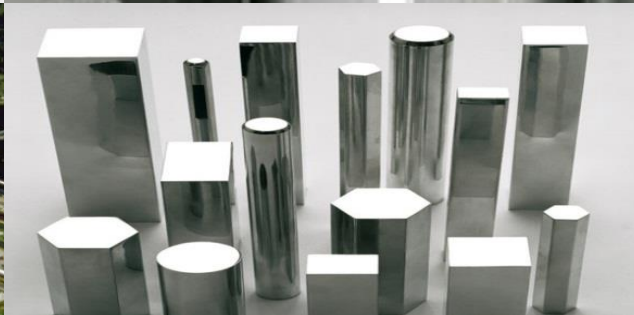


FUTURE

Passenger aircraft

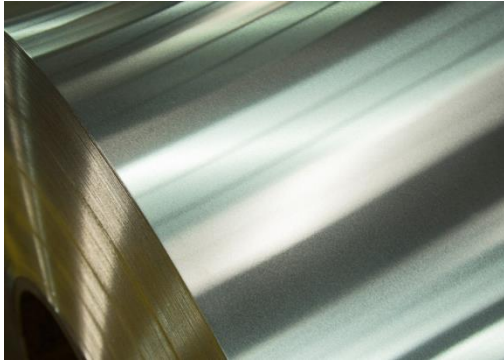


**HIGH TECHNOLOGY
FOR HARD AND SPECIAL
ALUMINIUM ALLOYS**



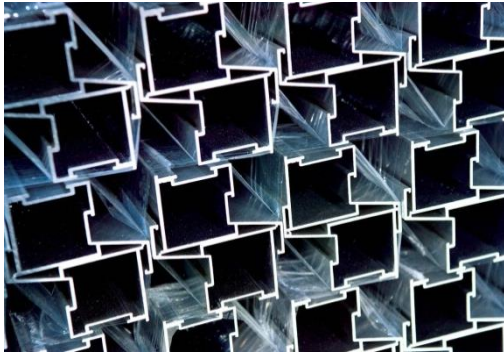
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TECHNOLOGIES TO COMPETE WITH

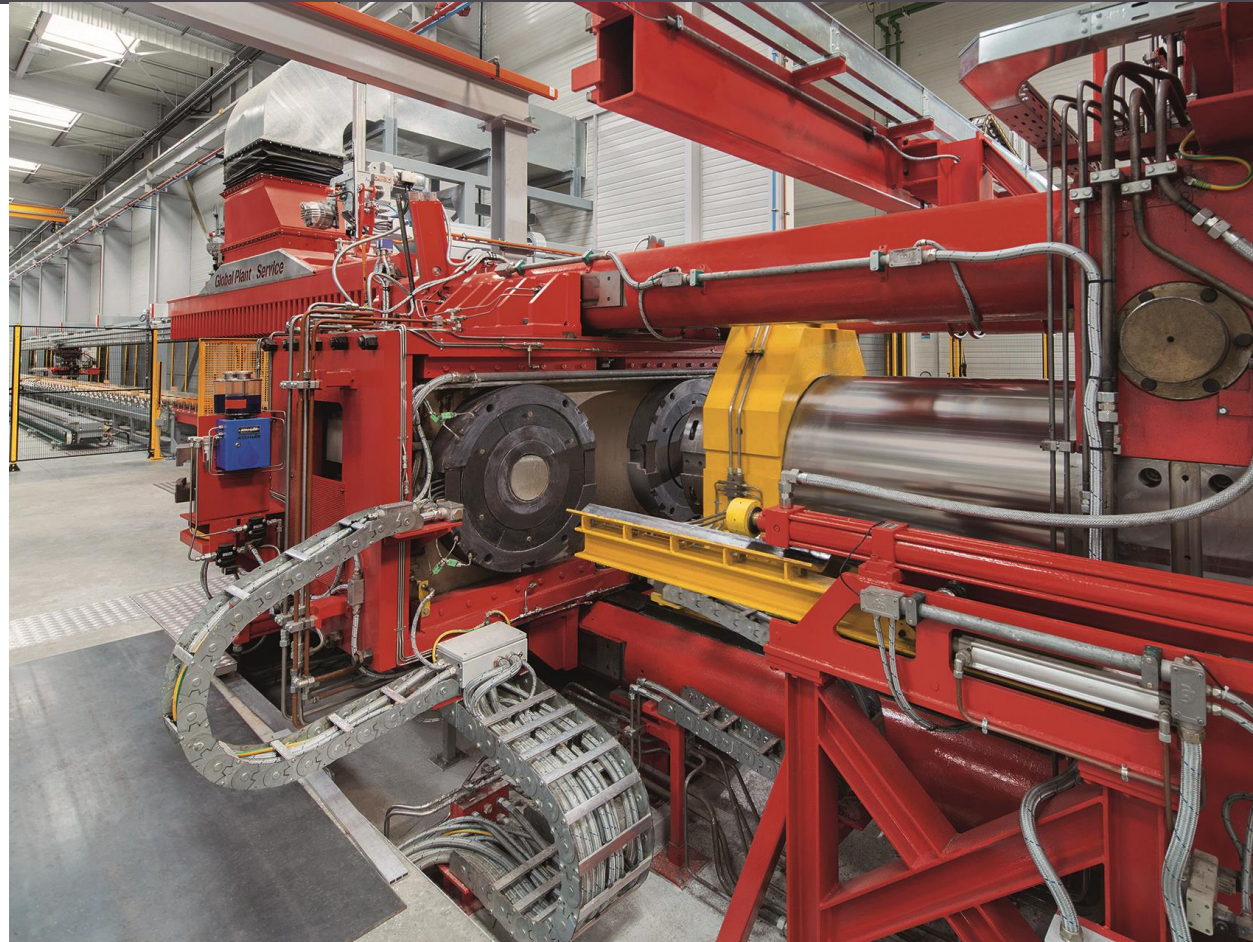


Aluminium strip produced with the innovative Alcoa Danieli Micromill process which offers improved mechanical characteristics: see possible production of 7xxx alloys to compete with steel.





**Energy saving with the new
ESED Electrical Drive which
guarantee up to 40% power
saving.
Reduced dead cycle time
saving up to 40% installed
power by the exclusive
T-win press.**





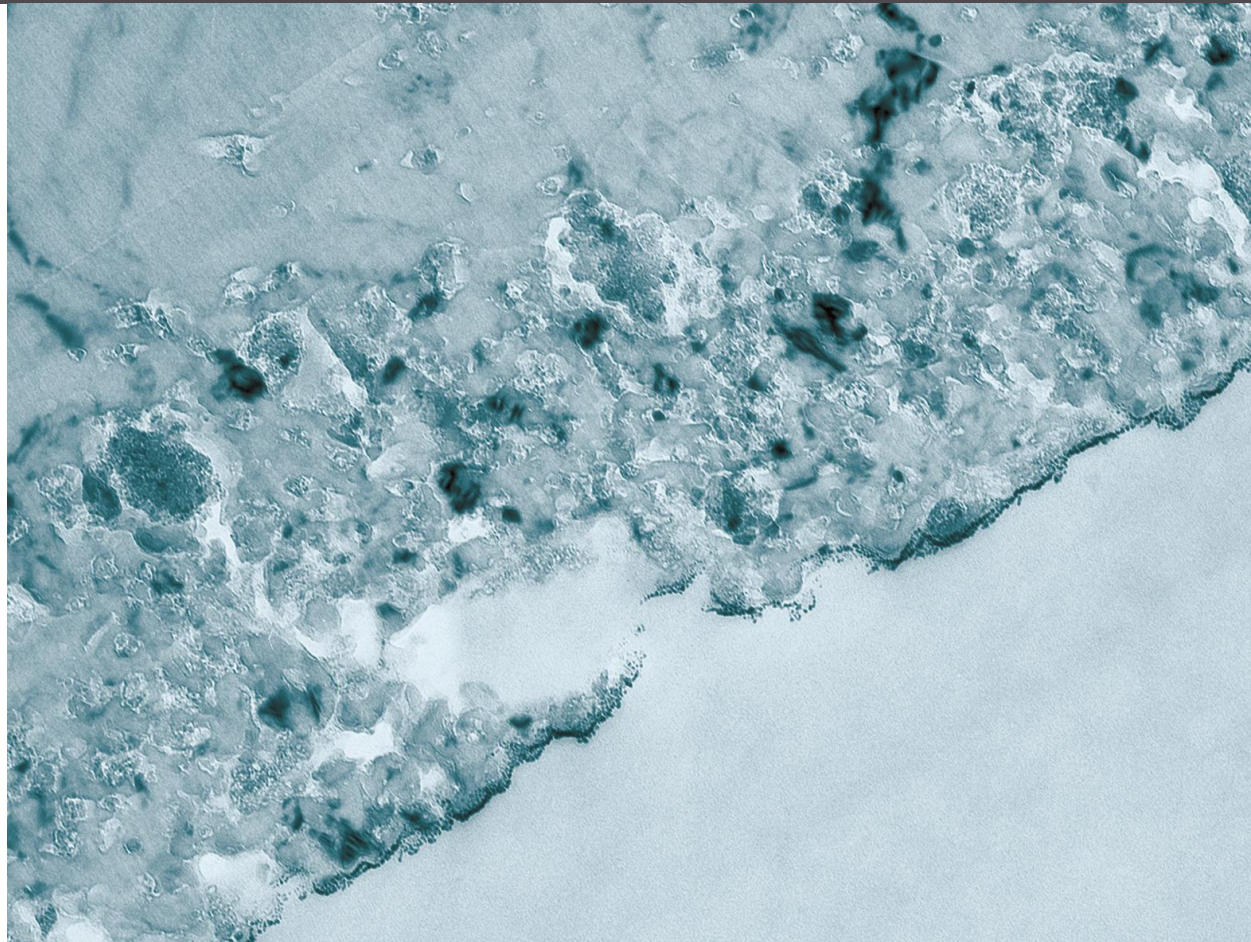
**Endless aluminium
hard-alloy rod production;
less than 3 hours from
ingot to finished coil
with 3 operators.**





Part of Danieli Group

**Product and process know
support are key in the
development of new
products and to tune
production facilities to the
needs
of the end users.**



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DANIELI PERSIA MANUFACTURING AND SERVICE CENTER



| | |
|------------------------------|-------------------|
| MACHINING: | 4.600 SQM |
| ASSEMBLY (H+L): | 3.900 SQM |
| WAREHOUSE & | 2.500 SQM |
| AUX: | 5.000 SQM |
| FACTORY MISC: | 16.000 SQM |
| TOT COVERED AREA: | |



DANIELI PERSIA
MANUFACTURING AND SERVICE
CENTER

THE NEW MANUFACTURING
AND SERVICE CENTER

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CONCLUSIONS

**1,5 Mtpy
by year 2025:
the expansion
plan
for the Iranian
industry.**

**Iran high
competitiveness
:
energy and
natural gas
availability
at low costs.**

**Persian
Metallics: JV for
the construction
and operation
of an iron ore
treating
complex.**

**Danieli support
to the Iranian
aluminium
industry and
steel plants
supplied
since 1980.**

**Danieli Persia
manufacturing
and service
center:
in operation
by Dec. 2016.**

A STEP
AHEAD
IN CAPEX
AND
OPEX

DANIELI

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PRESIDENT
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