



The advantages of PE 100 Global case studies

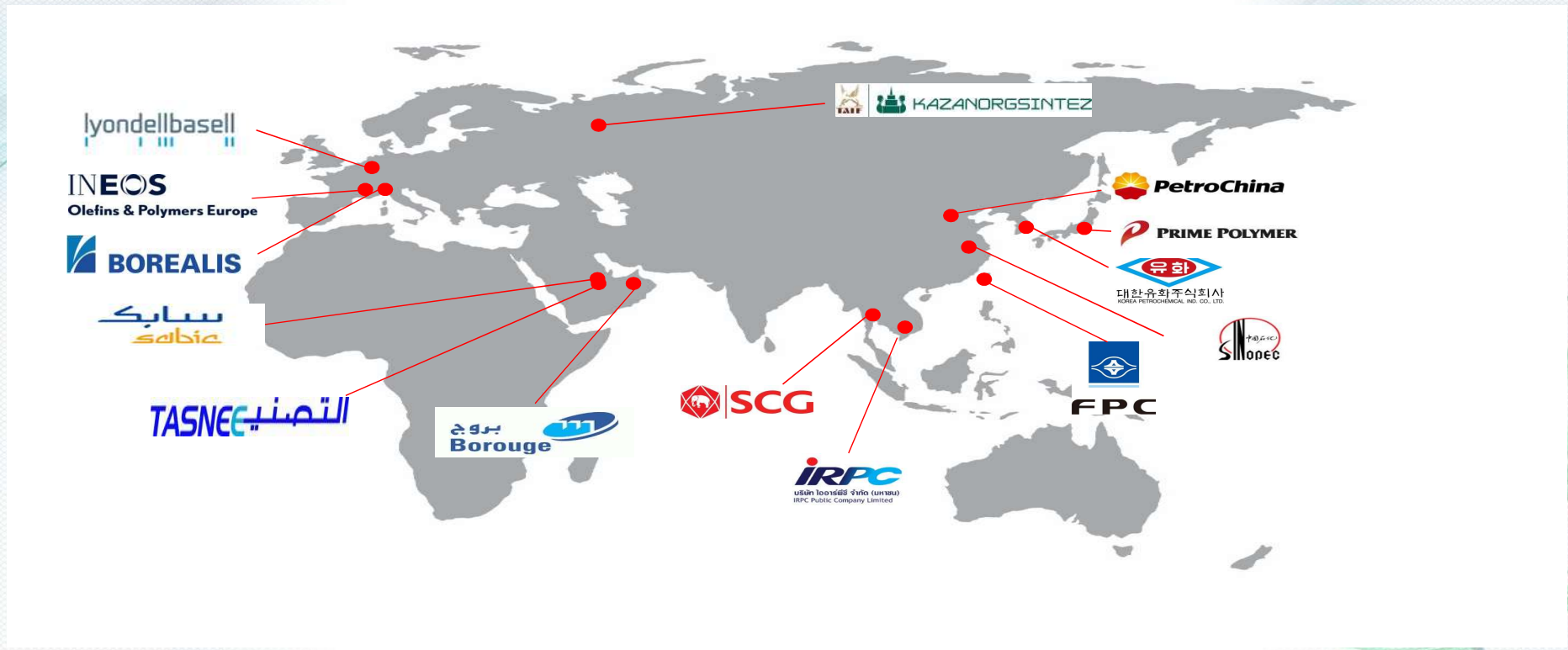
Rainer Kloth
Youssef Taha

Case studies - aim

- Show advantages of PE 100
- Strengthen trust in PE 100 by practical example
- Encourage grid owners to use PE 100 pipes
- Knowledge sharing
- Showing successful track record



PE 100+ association – international members



PE 100+ association at a glance

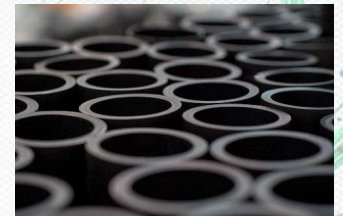
- Globally active since more than 20 years
- Founded on 24th February 1999
- Location, Apeldoorn, The Netherlands
- 14 PE material producers are members in 2021
- Objectives
 - Assuring consistent quality of PE 100+ pipe materials via standard setting and test rounds
 - Establishing a PE 100+ logo accessible for every PE pipe material producer
 - Building trust in PE 100 materials
 - Promotion of usage of PE piping systems
 - Providing guidance to installers
 - Focus towards end-users with more information support

Polyethylene PE 100 – advantages for installers and grid owners

- Favorable maintenance costs through
 - Long service life up to 100 years (gas and water)
 - Corrosion free – no extra protection/maintenance
 - Leak tight connections
- Time savings during construction by
 - Light weight/Pre-fabrication outside trench
 - Coilable/deliverable in longer length
 - Small trenches
 - Applying trenchless methods
 - Flexibility
- Cost savings in installation
- Flexibility provides additional safety in case of earth movements

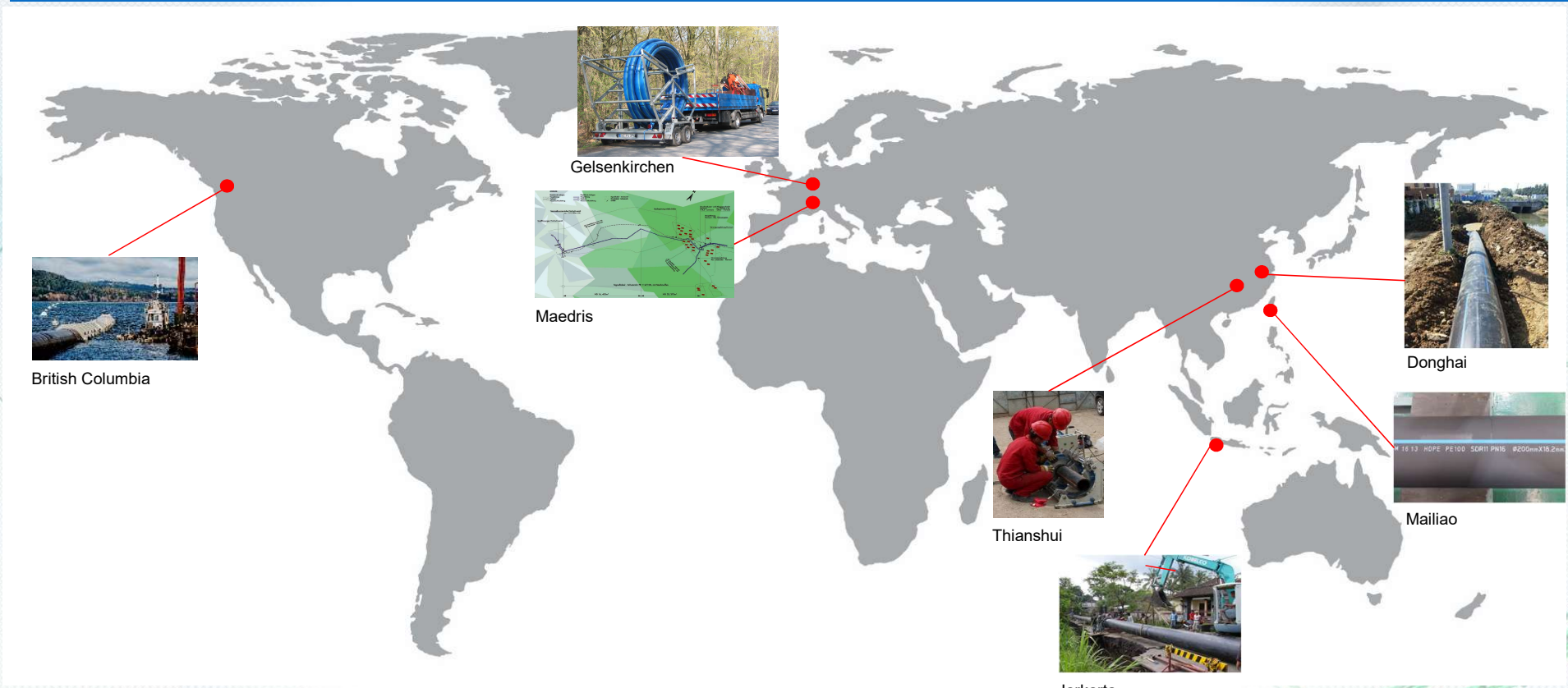


Source: SABIC



Source: SABIC

Global case studies



A world map with red dots indicating case study locations. Red lines connect these dots to various images and maps. The locations and their associated images are:

- British Columbia:** A photograph of a large pipe being installed in a body of water.
- Gelsenkirchen:** A photograph of a blue pipe being loaded onto a truck.
- Maedris:** A map showing a network of pipes and infrastructure.
- Thianshui:** A photograph of workers in red safety gear working on a pipe.
- Jakarta:** A photograph of a large pipe being installed in an urban area.
- Donghai:** A photograph of a large pipe being laid in a trench.
- Mailiao:** A close-up photograph of a pipe with technical specifications: "PE 100 SDR11 PN16 Ø200mm X15.2mm".

Case Study: New water supply pipeline – Jakarta/Indonesia

- Dn 90 mm – 800 mm line



Source: Borouge Pte Ltd



Source: Borouge Pte Ltd



Source: Borouge Pte Ltd

Key features for project

- Corrosion free – low maintenance costs
- Low density – easy installation outside trench
- Easy connection – pre-fabrication outside trench

Case Study: Fire protection Pipe – Mailiao/Taiwan

- Dn 110 – 630 mm SDR 11 and SDR 9 line



Source: Formosa Plastics Corporation



Source: Formosa Plastics Corporation

Key features for project

- Durability/Dependability – long service life
- Electrofusion welding – easy connection
- Light Weight – fast installation/small trench
- Free of corrosion – lower maintenance costs

Case Study: Gelsenwasser – Gelsenkirchen/Germany

- Dn 225 mm SDR 11 lines



Source: Gelsenwasser AG



Source: Gelsenwasser AG



Source: Gelsenwasser AG

Key features for project

- Long service life – amortization time based on 100 service life
- Cost reduction of around 30 % by relining vs. conventional installation
- Cost advantage by faster installation due to lower number of joints

Case Study: British Columbia Outfall/Canada

- 2 km of Dn 2250 mm SDR 26 and SDR 21 line



Source: Borealis AG



Source: Borealis AG

Key features for project

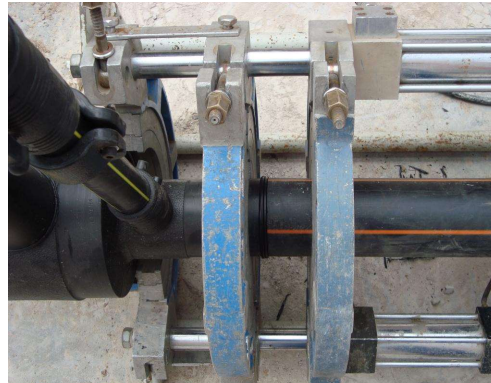
- Corrosion free – no extra protection
- Flexibility – enabling float and sink method
- Supply in long length – less connections needed

Case Study: Gas Pipe Network - Tianshui City/China

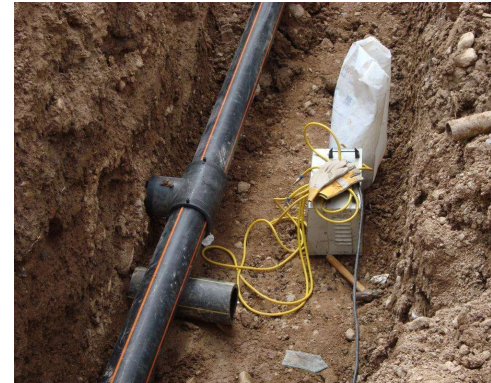
- 3 km of Dn 63 mm – Dn 250 mm lines



Source: Petrochina Dushanzi Petrochemical Company



Source: Petrochina Dushanzi Petrochemical Company



Source: Petrochina Dushanzi Petrochemical Company

Key features for project

- Durability – expected service life over 50 years
- Leaktight connections – low maintenance costs
- High impact resistance – use at temperatures below 0 °C possible
- Flexibility – maintaining integrity in case of subsidence and earthquakes

Case Study: Rural Drinking Water Project – Donghai/China

- Dn 20 mm – 315 mm line



Source: Sinopec Petrochemical Company Co., Ltd.



Source: Sinopec Petrochemical Company Co., Ltd.



Source: Sinopec Petrochemical Company Co., Ltd.

Key features for project

- Durability – service life of more than 50 years
- Leak tight connections – low impact on environment
- Flexibility – easy installation

Summary

Case studies underpin major arguments in favor of PE 100

- **Long service life up to 100 years**
- **Corrosion free**
- **Low weight**
- **Ease of installation/low cost/low impact on surroundings**
- **Flexibility**
- **Weldability**



Global case studies



Thank you for your
attention

Visit us on: www.pe100plus.com