Energy transition & Digitization

René van der Plas, director Port of Rotterdam International
November 21st 2019
The Port of Rotterdam Authority creates **economic and social value** by working together with clients and stakeholders on the realization of **sustainable growth** in Rotterdam’s world-class port.

- **469M tons**
- **385,000 employees**
- **12,643 ha**
- **6.2% GDP (€ 46B)**
- **Depth up to 75 ft / 24 m**

- **#1 Europe, #9 World**
- **14.5M TEU**
- **29,600 vessels**
- **105,000 barges**
- **Market Share 37%**

- **#1 Port Infrastructure (World Economic Forum)**
- **Profit € 254M (€ 707M revenues)**
- ± € 200M (PoR investments)
- ± € 1.5B (private investments)

Introducing Port of Rotterdam
Maasvlakte 2, area for sustainable development
The change of an era....

Rotterdam as Waste-to-Value

Autonomous ships through smart innovation
The port industry is carbon intensive
20% of the Netherlands’ total CO2 emissions

- >30 refinery processes
- >40 petrochemical processes
- >70 electricity generation units
Energy transition in the Port of Rotterdam
3-step report direction 2050

AND-AND APPROACH

• And help existing industry and logistics cluster to adjust to future climate demands
• And attract new sustainable industries
• In doing so, protect and enhance economic value
• Carve out an enhanced competitive position

IN THREE STEPS TOWARDS 2050

1. Efficiency and infra
2. New energy system
3. Circular economy
Energy transition program

**STEP 1**  
**EFFICIENCY; INFRA FOR HEAT, STEAM, CCUS**
- Efficiency at plants
- Heat network
- Steam network Botlek
- Connection windfarms North Sea
- Porthos (CCUS)
- Cold ironing
- Efficiency shipping industry

**STEP 2**  
**A NEW ENERGY SYSTEM**
- Production wind turbines
- Windfarms onshore
- North sea wind power hub
- Solar panels
- Blue hydrogen
- Corrming biomass
- Green hydrogen (power to H2)

**STEP 3**  
**A NEW SYSTEM FOR RAW MATERIALS AND FUELS**
- Waste-to-chemicals
- Pilots circular economy
- Bio-kerosene
- Zero emission inland shipping (electric, hydrogen)

**2050**  
**LIMIT GLOBAL WARMING TO 1.5°C TO 2°C**

**NOW**
- CCU: Mineralization, green houses

**COMING SOON**
- Enlarging electricity network
- Windfarms offshore
- Power to heat
- Power to hydrogen
- Hydrogen network
- Geothermics
- Energy storage

**MAY 2019**

**AAPALATINO**
XXVIII CONGRESO LATINOAMERICANO DE PUERTOS MIA MIAMI 2019
19-21 DE NOVIEMBRE DE 2019 | HOTEL INTERCONTINENTAL MIAMI, EEUU
There is a lot to gain in logistics

30% Of shipments is delayed

28 Parties involved per transaction

44% Of executives describe supply chain visibility as top priority

25% Of trucks on the road is empty
Our world in transition
Faster than we think. With greater impact than we think.

New partnerships
New companies
New technologies
A smart port is a connected port
Step by step towards a digital port

**PORT FORWARD VISION**

- **0** NO AUTOMATION
- **1** INDIVIDUAL AUTOMATION
- **2** INTEGRATED SYSTEM IN THE PORT
- **3** INTEGRATED SYSTEM FROM PORT TO HINTERLAND
- **Global** CONNECTED PORTS AND LOGISTICS CHAINS

**PORT FORWARD STRATEGY**

- **Port Authority**
  - Portmaster
- **Port Community**
  - Portinsider
  - Navigate
  - Pronto
  - Ontrack
  - Streamline
  - Boxinsider
- **Hinterland**
- **Global** SMART PORT

**DELIVER** – blockchain project Samsung / ABN Amro / Port of R’dam

**Meanwhile accelerate DATA EXCHANGE**

**CONNECTED PORTS**
THANK YOU FOR YOUR ATTENTION.