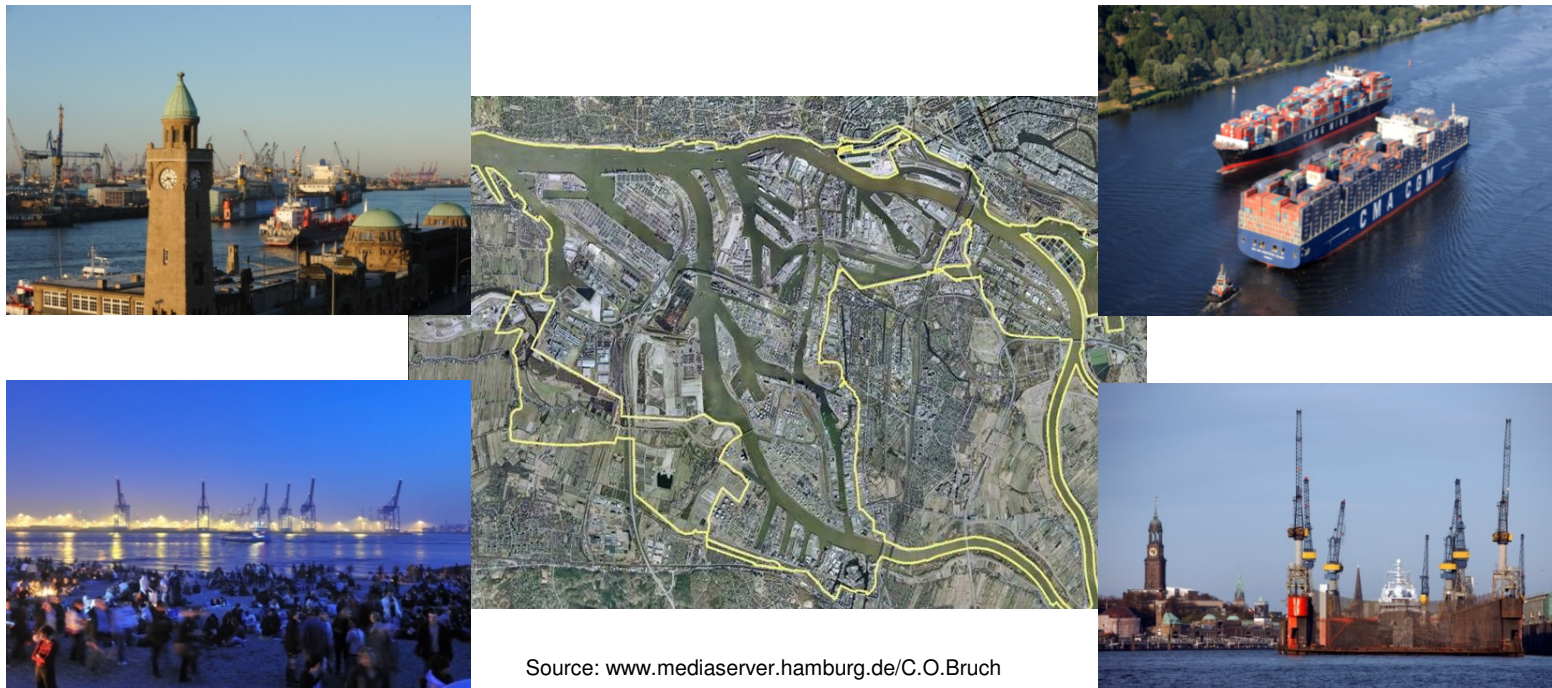




ONSHORE POWER

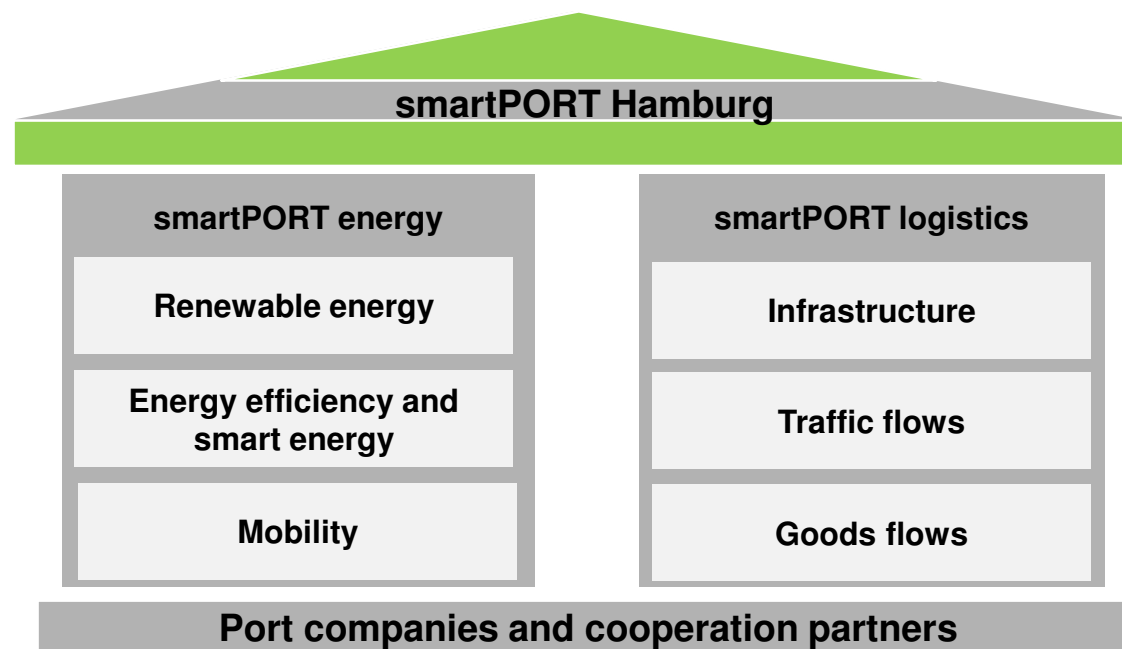
## The current on shore power project for cruise ships in Hamburg

## Our Port – in the middle of the city – has its special challenges



Source: [www.mediaserver.hamburg.de/C.O.Bruch](http://www.mediaserver.hamburg.de/C.O.Bruch)

## The Port will become more intelligent with smartPORT Hamburg



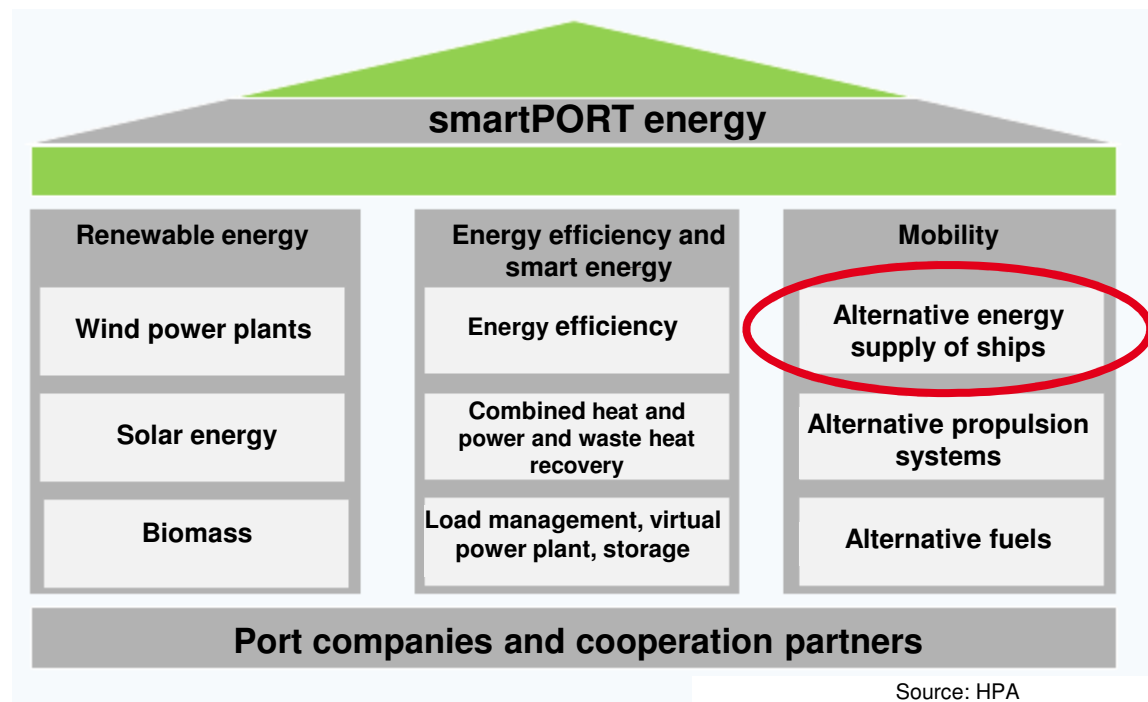
Source: HPA

## The Port will become more intelligent with smartPORT Hamburg

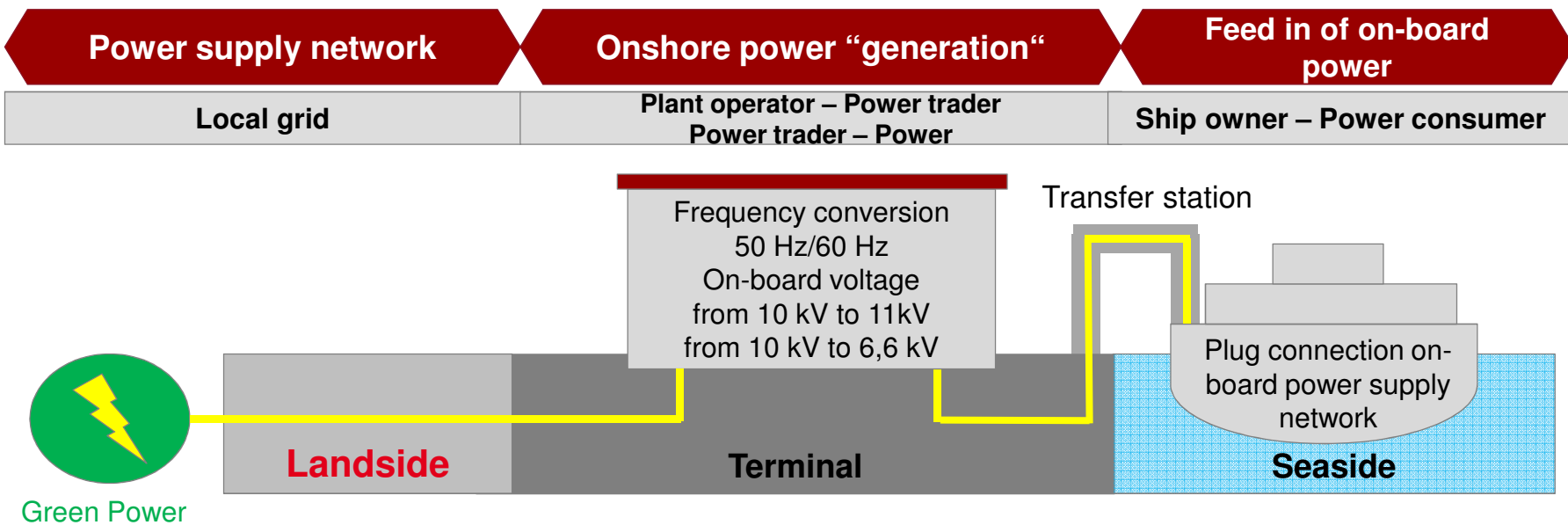


Source: HPA

## smartPORT energy: Showcase for environmental technologies

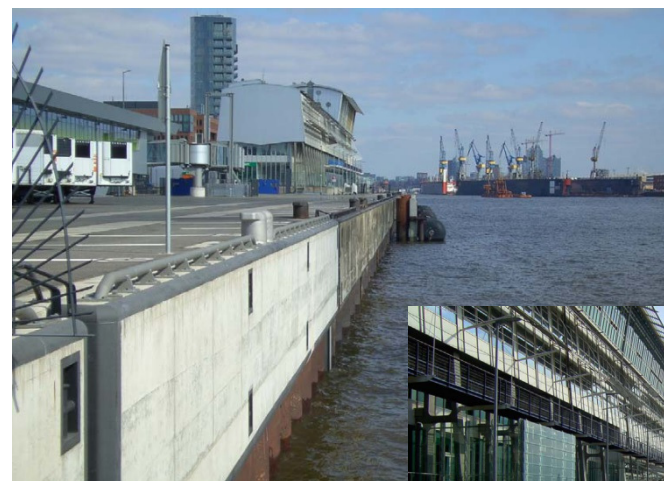


The functional principle of an onshore power generating plant is the same for all options



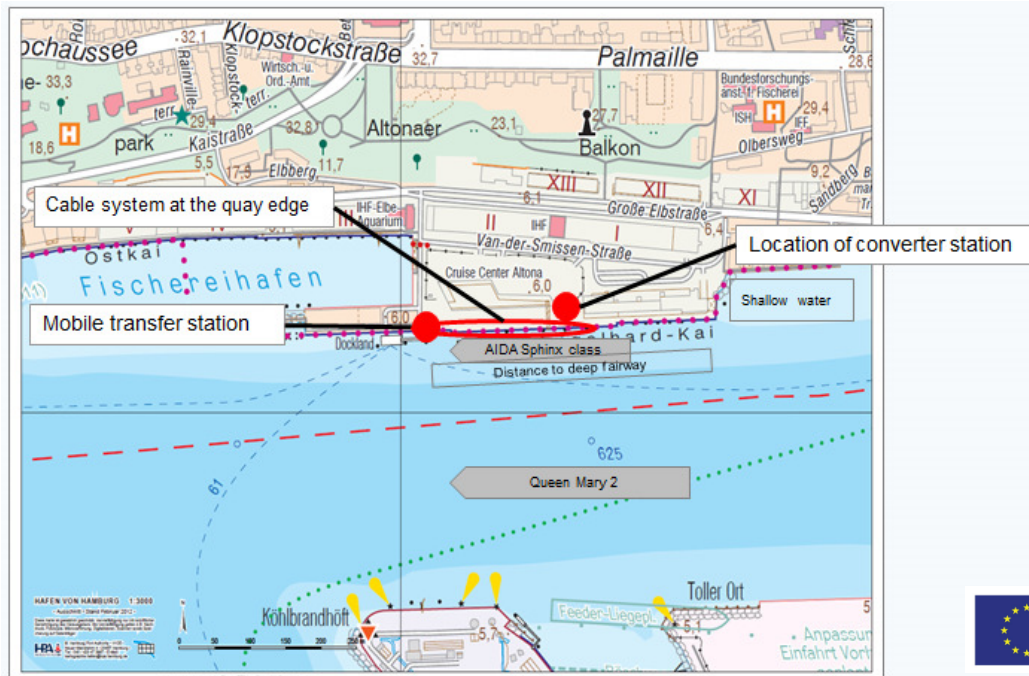


## Cruise terminal Altona – current situation



Source: HPA

## Cruise terminal Altona



### Cruise Terminal

- 1 berth
- Capable for cruise vessels up to 300m
- Within city area of Altona
- Hiking trail along the Elbe

### Power generating plant

- 12 MVA
- Conversion from 50 Hz to 60 Hz
- 6,6 kV 60 Hz, 11 kV 60 Hz
- 10 Mio € invest



**Co-financed by the European Union**  
Trans-European Transport Network (TEN-T)



## Onshore power facility at the cruise terminal Altona – Transformer Station

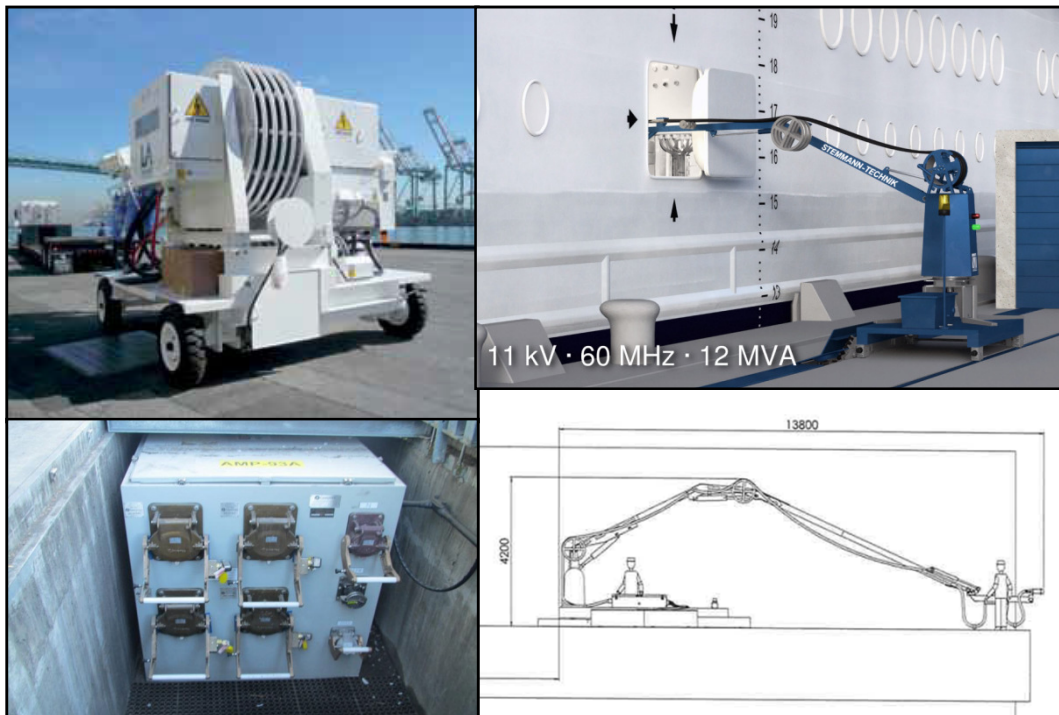


Source: HPA

### Facts

- draft of the building for the converter station
- two floors
- approx. 290 sqm
- flood protection through stilts

## Onshore power facility at the cruise terminal Altona – Cable Management



### Connection to the Cruise Vessel

- IEC/ISO/IEEE Standard
- New cable management system
  - No cable handling landside necessary
  - Independent of sitting of energy facility on board

Source: HPA

## Onshore power facility at the cruise terminal Altona – Situation at construction area



### Actual planning

- Roofing ceremony  
November 2014
- Technical installations  
in 2015
- Inauguration May 2015

Source: HPA

## Challenges and questions



- Refinancing of the invest
- Price for OPS usage
- Amount of power the ships need
- Operating model due to German law restrictions
- Liability questions

Source: HPA

## City of Hamburg – Calling at a smartPORT





Thank you for your attention !



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