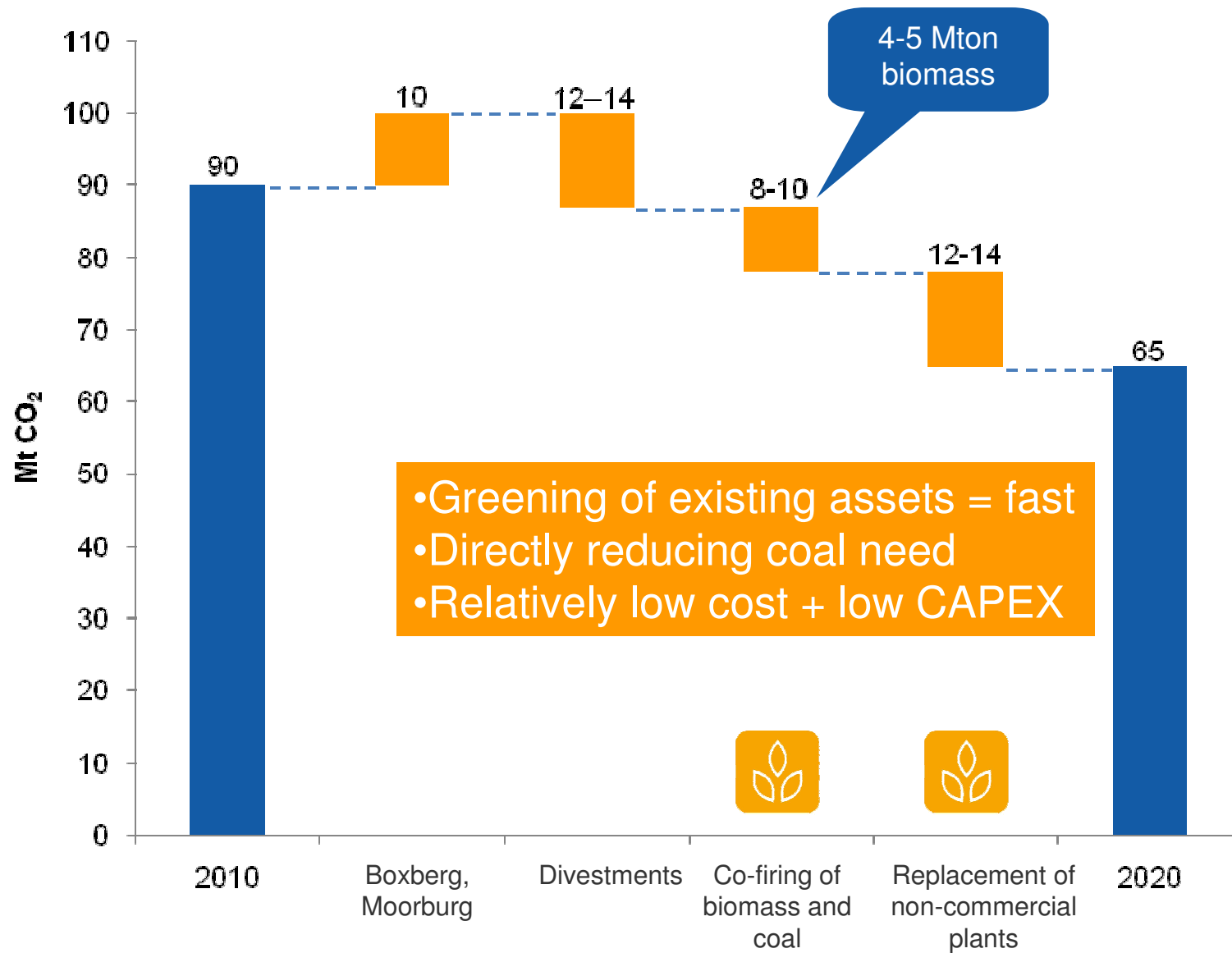


Bioenergy within Vattenfall: now



Vattenfall's reduction of CO₂ exposure towards 2020



The Vattenfall Bio-energy Strategy



Co-fire refined pellets (medium term) + white pellets (short run)

- High co-firing rates
- Minimize downstream CAPEX



• BioCHP integrated in existing heat clusters



- Green heat demand
- Reduce must-run hours fossil assets

• Upstream integration

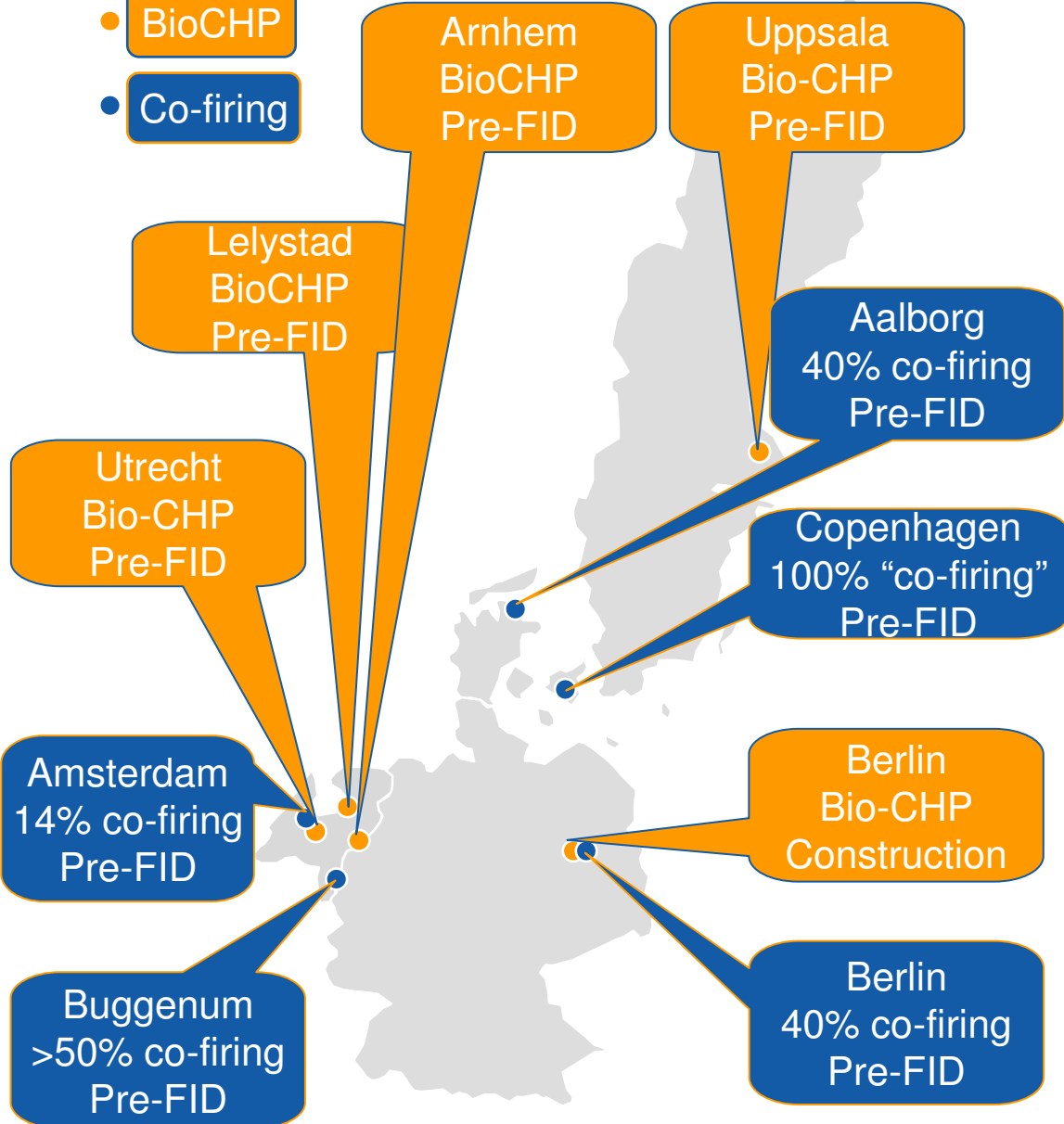


- Participation in upstream investments (refined pellet focus)
- Supply security
- Manage risk in availability, price, quality and sustainability

Bio-energy projects under development



- BioCHP
- Co-firing



Key success factors for bio-energy



- **Stable support schemes**

- Support requirements will decline over time, but still needed today
- Project development takes several years
- Good examples:
 - Supplier obligation Sweden
 - Green electricity subsidy + green heat tax exemption Denmark



- **Sustainability**

- Sustainability essential for credible role bio-energy
- Need for harmonised systems, supported by relevant stakeholders
- Focus on both criteria and implementation
- Binding EU criteria