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# Why Climate & Energy Adaptation? ... and how could it be enacted?

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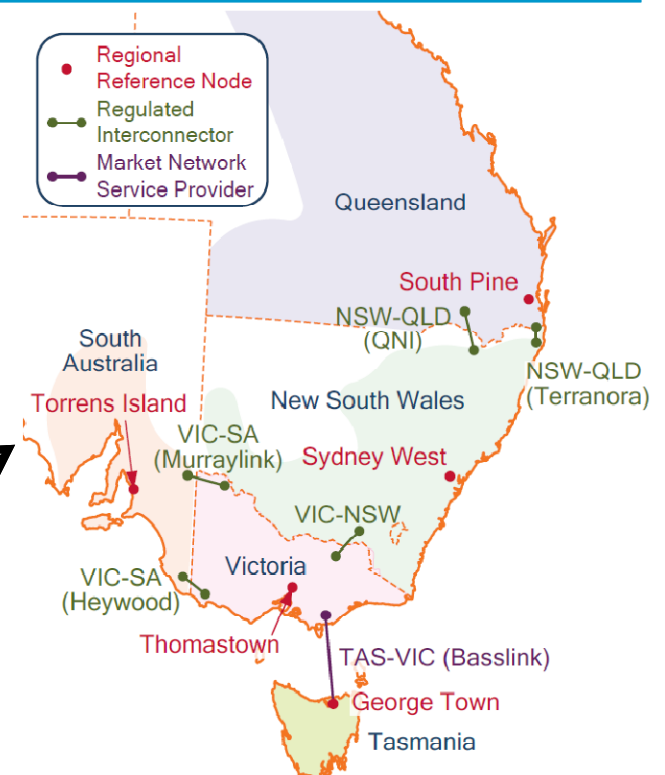
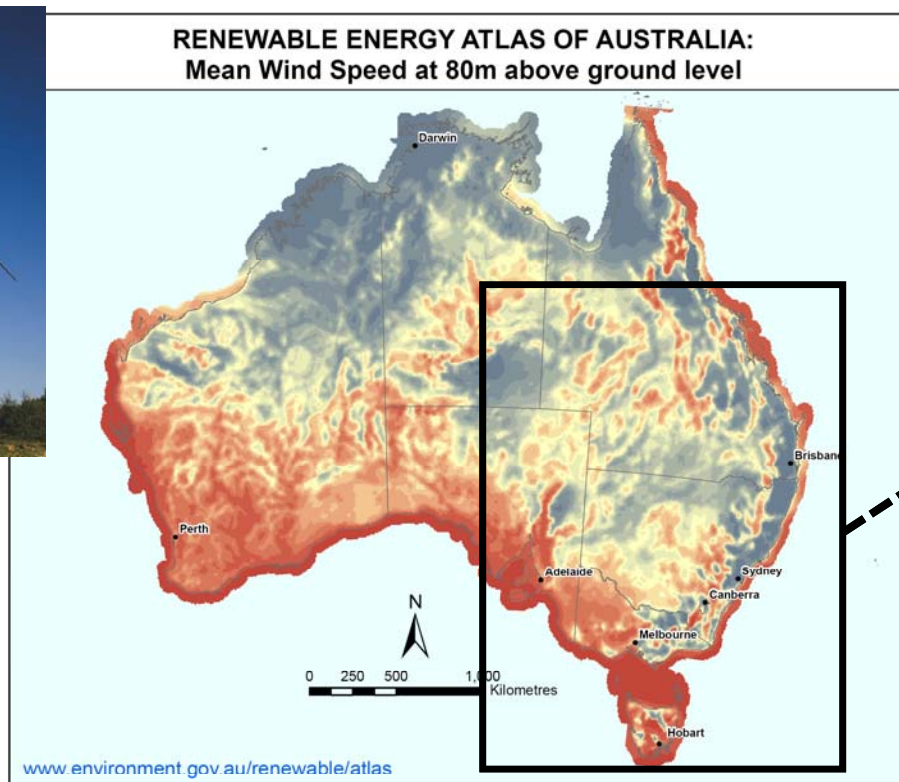
**World Bank, Washington DC, 25 March 2010**



# Why Climate & Energy Adaptation?

## Planning for wind energy grid integration

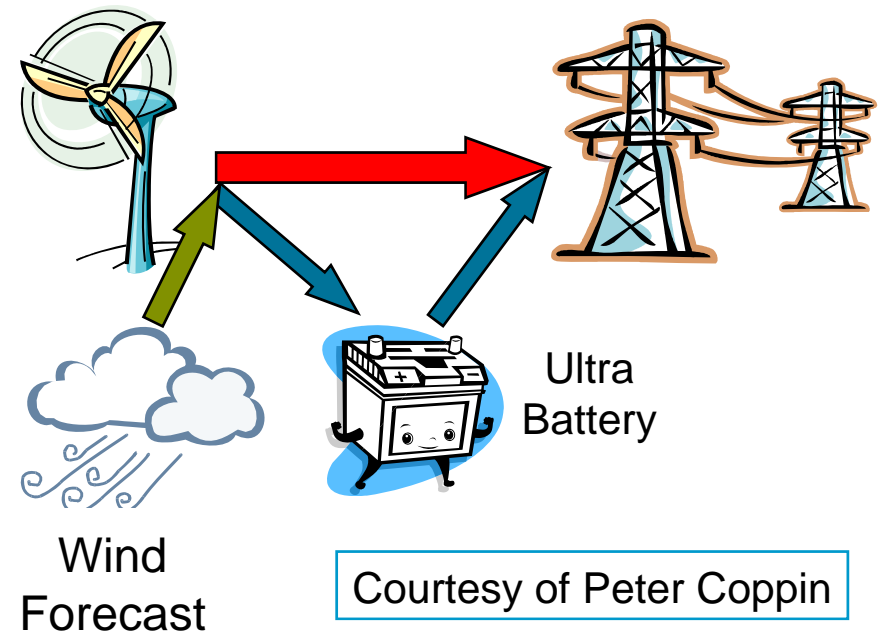
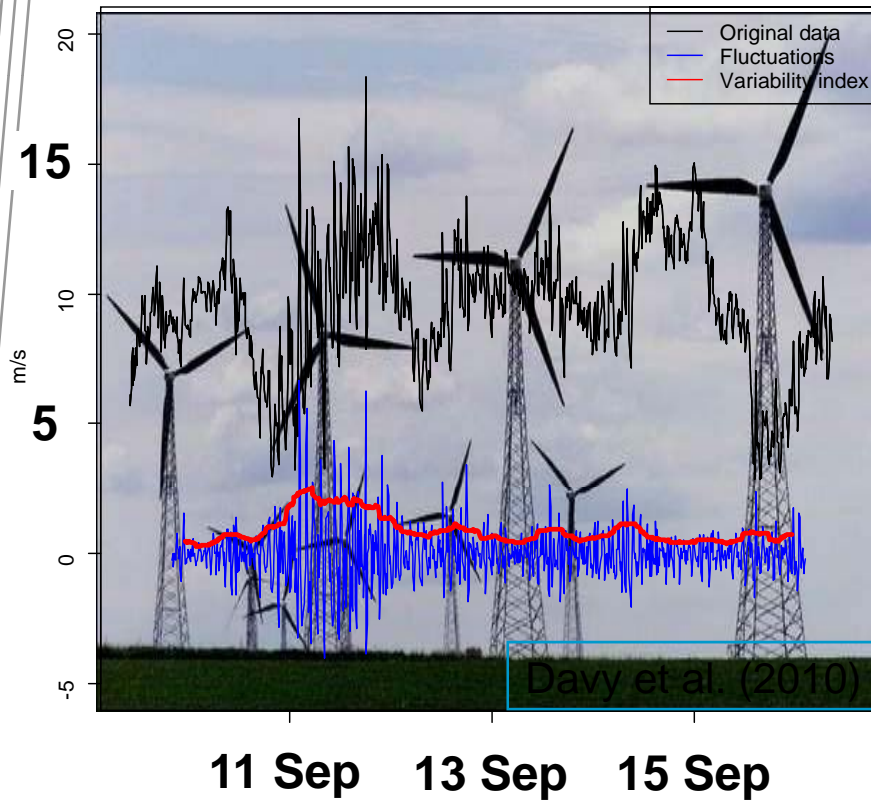
Wind farms often planned on mean winds ... but wind variability issue for energy grid and may be aggravated under climate change  
→ **Climate in wind energy planning essential**



# Why Climate & Energy Adaptation?

## Wind variability and grid integration

- Excessive ramp rates may lead to curtailment (grid capacity limits)
  - Need to account for possible enhanced variability under CC
  - Can also store energy but climate needed to optimise storage planning
- Climate in wind energy planning essential**



# Agenda for action

**Climate change threats and opportunities identified**

**Energy system vulnerability assessed**

**Climate Risk Management required**

**Action needed ... but how?**

**Let us think out of the box ...**

# Weather and Climate Services for the Air Transport Industry

- **Efficiency and sustainability of many information networks**
  - Information Services and Sustainable Systems
  - Efficiency at any level and worldwide
  - Regional systems integrated and globalised while also serving local interests
  - Planning and operations for one of the most demanding security and commercial interests



# Weather/Climate Services System for the Aviation Sector (1/2)

- **Weather & Climate Information collected at the airport site**
- **Services rendered by professional on site**
- **Weather and Climate Services integrated within other aviation services**
- **Needs of the Aviation Sector identified and standardized globally (WMO, ICAO)**
- **Contribution to the cost of the Met/Climate Services for Air Security and Economy negotiated via IATA**

# Weather/Climate Services System for the Aviation Sector (2/2)

- **Communication of the services through specialized structures**
- **Weather Information used for operations and safety accessible globally with no restriction via the user system**
- **A weather station at the airport is the best and most reliable climate information source**
- **Research and Capacity Building organized at the regional and global level (ICAO, WMO, Universities)**



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# Thank you for your attention

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