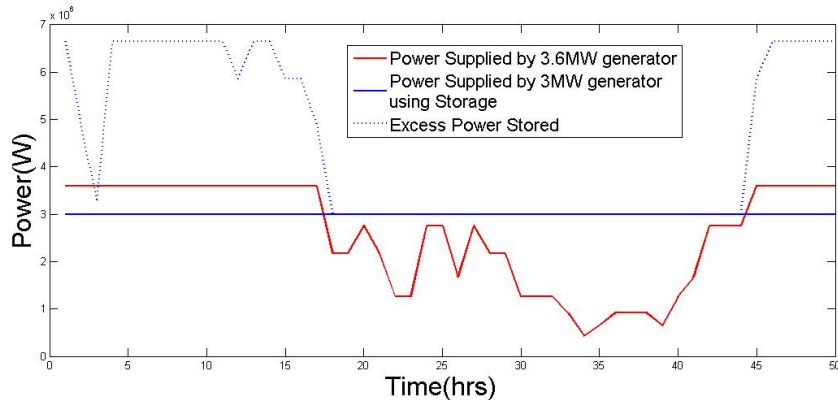


Novel Compressed Air Approach for Off-Shore Wind Energy Storage

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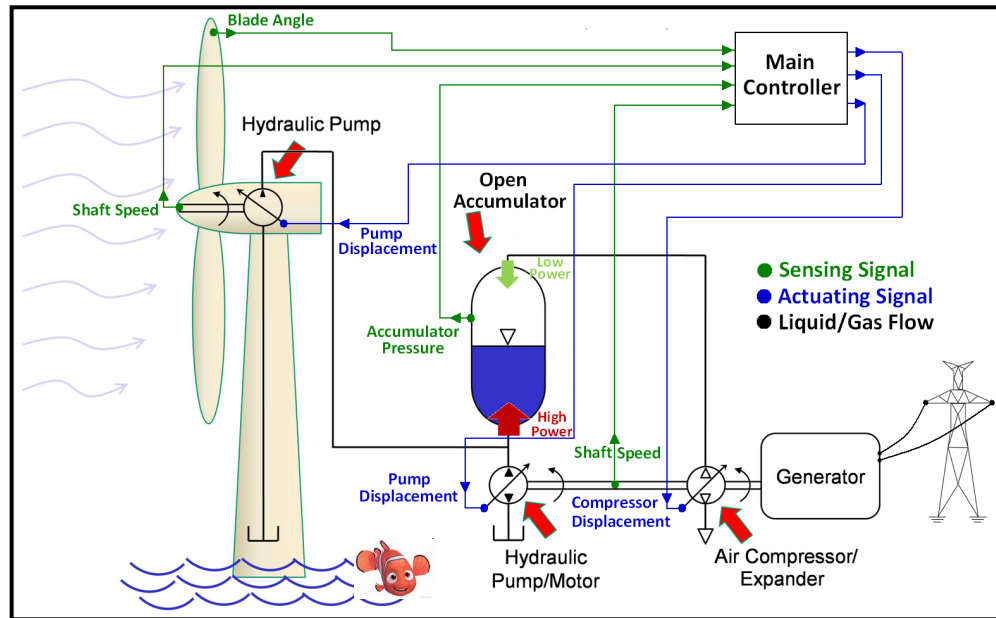


Motivation:

- Wind supply / power demand mismatched
- Intermittent and unpredictable
- Turbines have low (40%) capacity factor

Benefits of Storage:

- Even out supply/demand variation
- Down-size components at demand level



Compressed air storage:

- Reasonable energy density
 - $\sim 500\text{m}^3$ for $8 \times 3\text{MWhr}$
- Cost effective
- Efficient if isothermal
- Turned on/off quickly
- Used anywhere



Multi-disciplinary Research:

Heat Transfer	Fluid Mechanics
Machine Design	Systems & Control



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