



# WIND FARMS: FROM DEVELOPMENT TO OPERATIONS

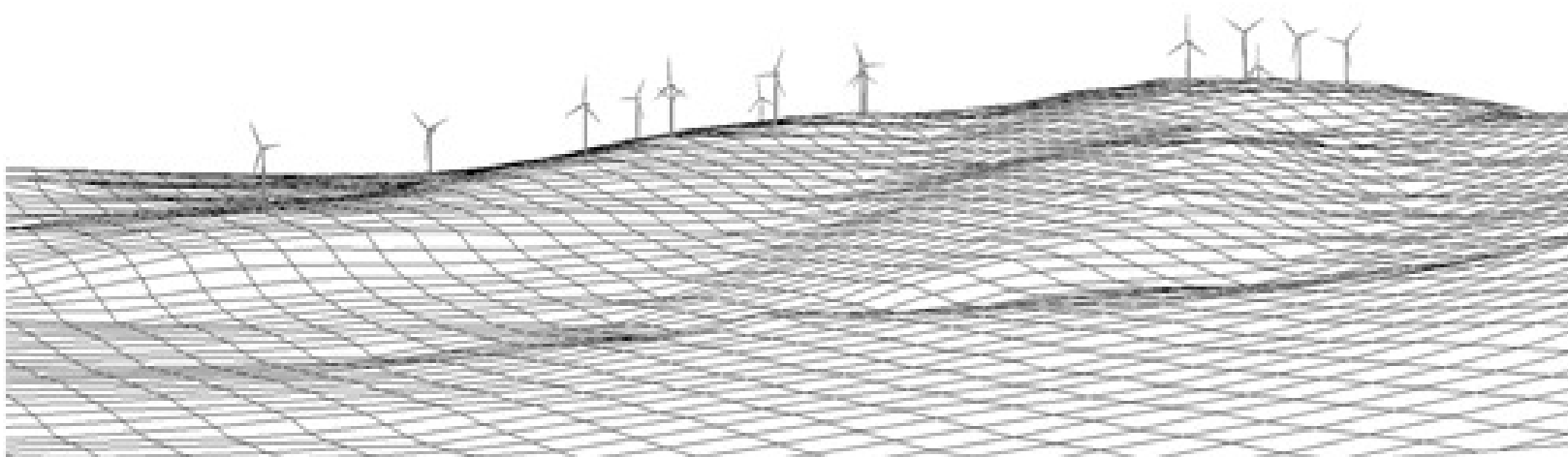
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UCC, October 22<sup>nd</sup> 2012

IEI Young Engineers Society



# Wind Energy Development Stages



# 1. Feasibility



Commercial

Technical

Planning

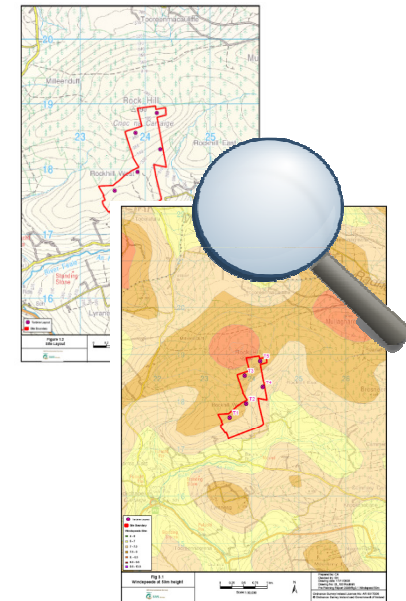
Environment

## Feasibility Assessment :

- Planning Policies – Site Zoning
- Environmental Designation(s)
- Wind Resource
- Site ownership
- Planning History - Site & Area
- Prelim Landscape & Visual Assessment
- Site Drainage & Hydrology
- Ground conditions, Land cover
- Proximity to neighbouring development
- Archaeological
- Prelim Grid Connection Assessment
- Access & Transportation
- Cumulative Impacts
- Assessment of Alternatives

# 1. Feasibility - cont'd

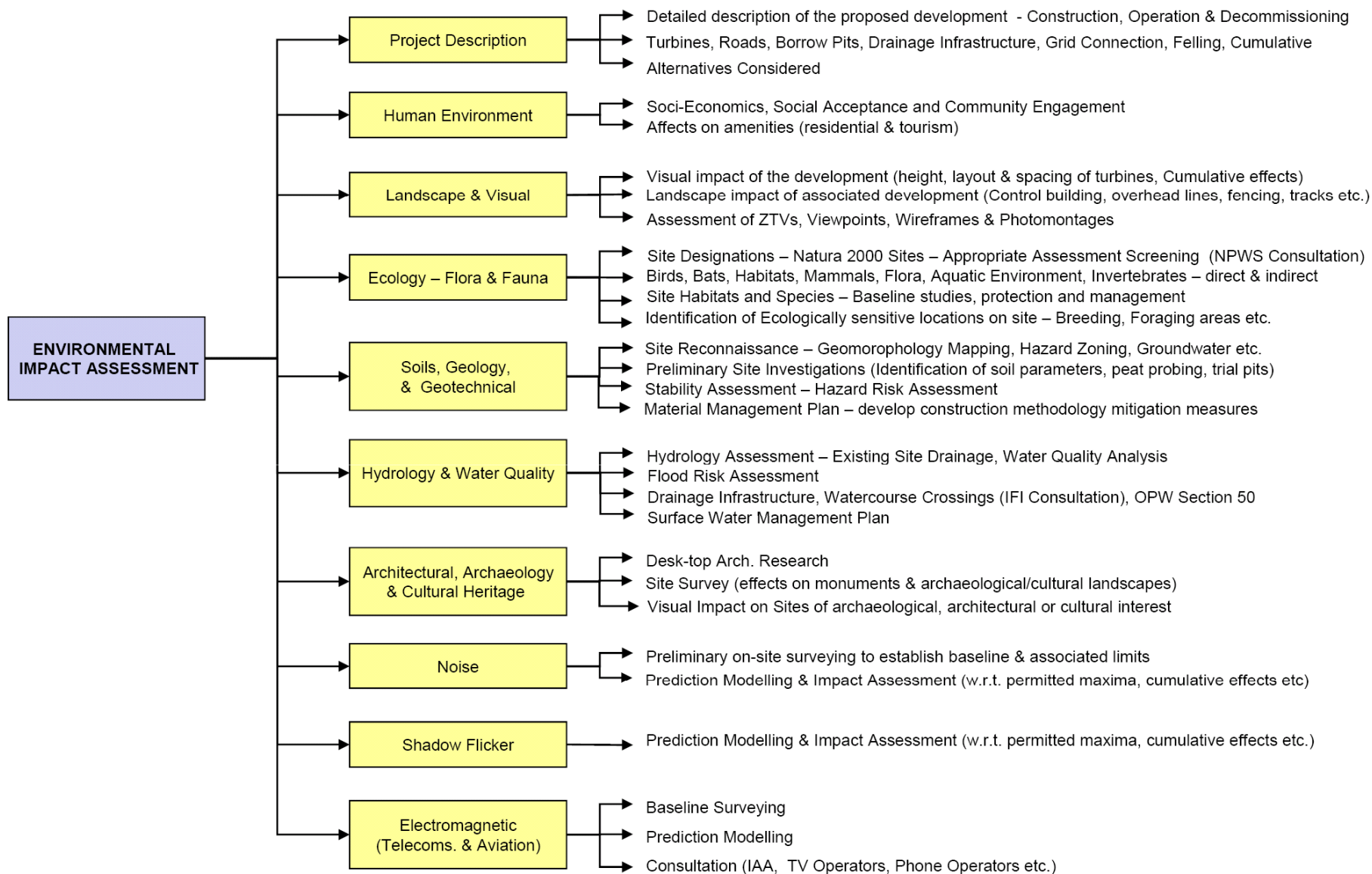
- Preliminary turbine layout
  - ✓ *Constraints identified*
  - ✓ *Viable development areas established*
  - ✓ *Site Capacity - no. of turbines*
- A feasibility study can prove very effective in identifying areas for further investigation and allows an early focus on relevant issues
- Pre-planning discussions
- Feasibility Stage Consultation



## 2. Assessment

- Development Team
- Environmental Assessment:
  - ✓ Environmental Impact Assessment (EIA)
  - ✓ Environmental Report
- An EIA is a **multi-disciplinary, iterative process** designed to identify, characterise and quantify the likely effects of a proposed development on the environment
- The approach to an EIA should be informed by:
  - ✓ Statutory requirements (EIA Directive and EIA Regs)
  - ✓ Consultation with statutory and non-statutory consultees
  - ✓ Current guidance and best practice

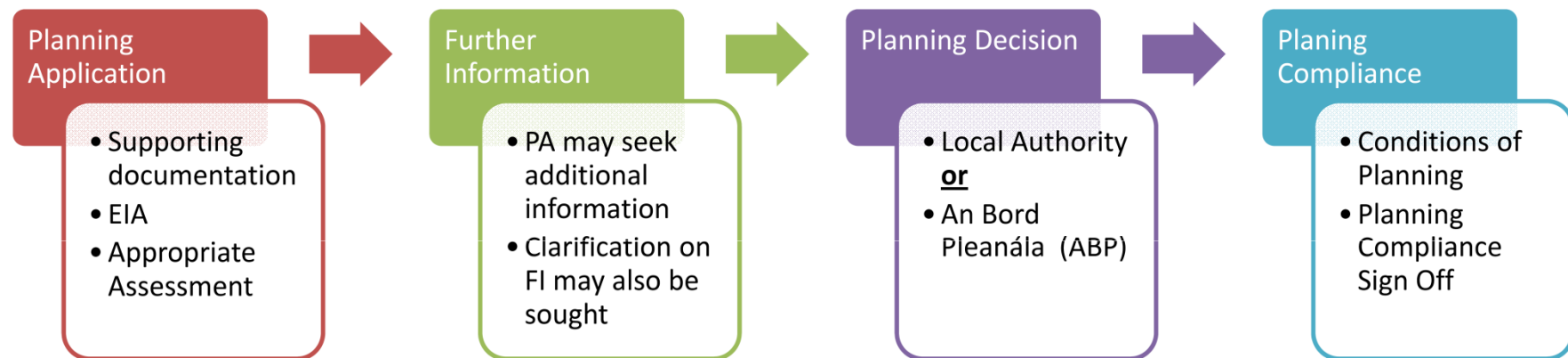






## 2. Assessment – cont'd

- Typical Planning Process



- Other possible consents & contracts:

- ✓ CER - *License to Construct, Authorisation to Generate*
- ✓ Felling License – *Forestry Services*
- ✓ Grid Connection Agreement - *Eirgrid*
- ✓ Land Lease Agreement

### 3. Construction Stage

- Development & implementation of a **Construction & Environmental Management Plan (CEMP)**, which defines
  - ✓ work practices
  - ✓ construction management procedures
  - ✓ environmental responsibilities

Ensuring environmental protection and planning compliance during development construction

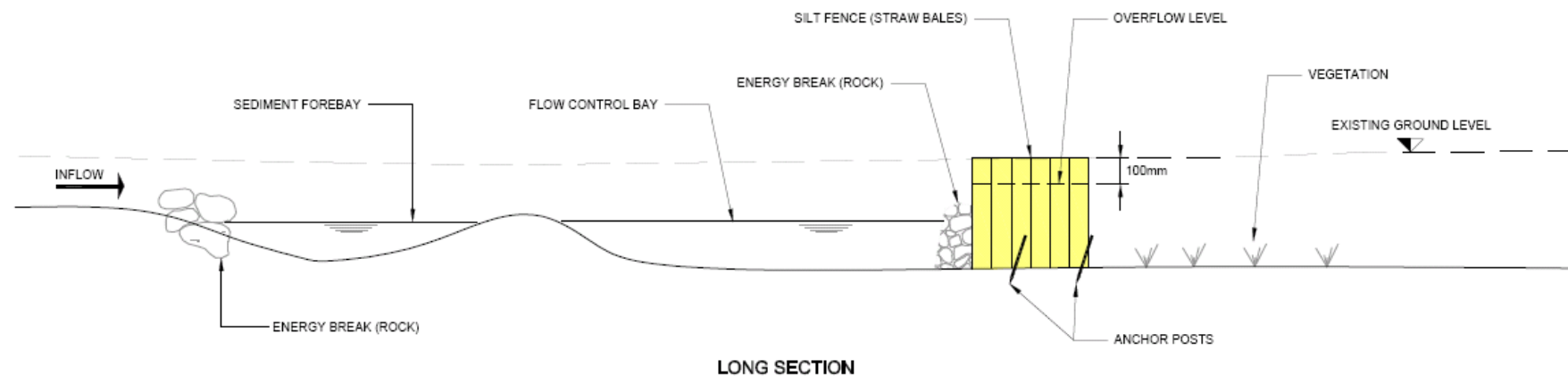
- Contractual requirement for Civil Contractor, Turbine Contractor, Electrical Contractor etc.





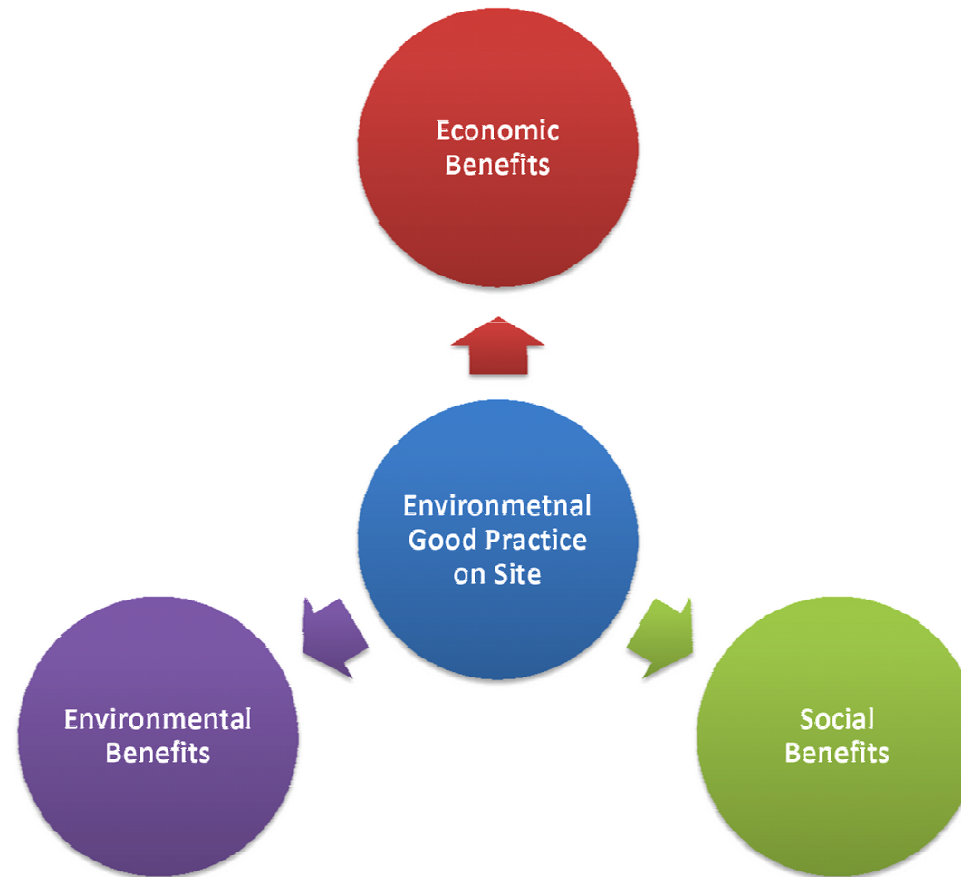
### 3. Construction Stage – cont'd

- Surface Water Management Plan:
  - ✓ Site Hydrology
  - ✓ Drainage Infrastructure
  - ✓ Erosion & Sediment Control – *buffer zones, silt traps, silt fencing etc.*
  - ✓ Watercourse Crossings – *bridges, culverts*
  - ✓ Materials Storage – *fuels, oils etc.*
  - ✓ Consultation – *IFI, OPW etc.*



### 3. Construction Stage – cont'd

Benefits of a CEMP & Good Environmental Practice on Site:





# Questions?

