Does Lack of Pre-Development Funding Impact Quality of WRA

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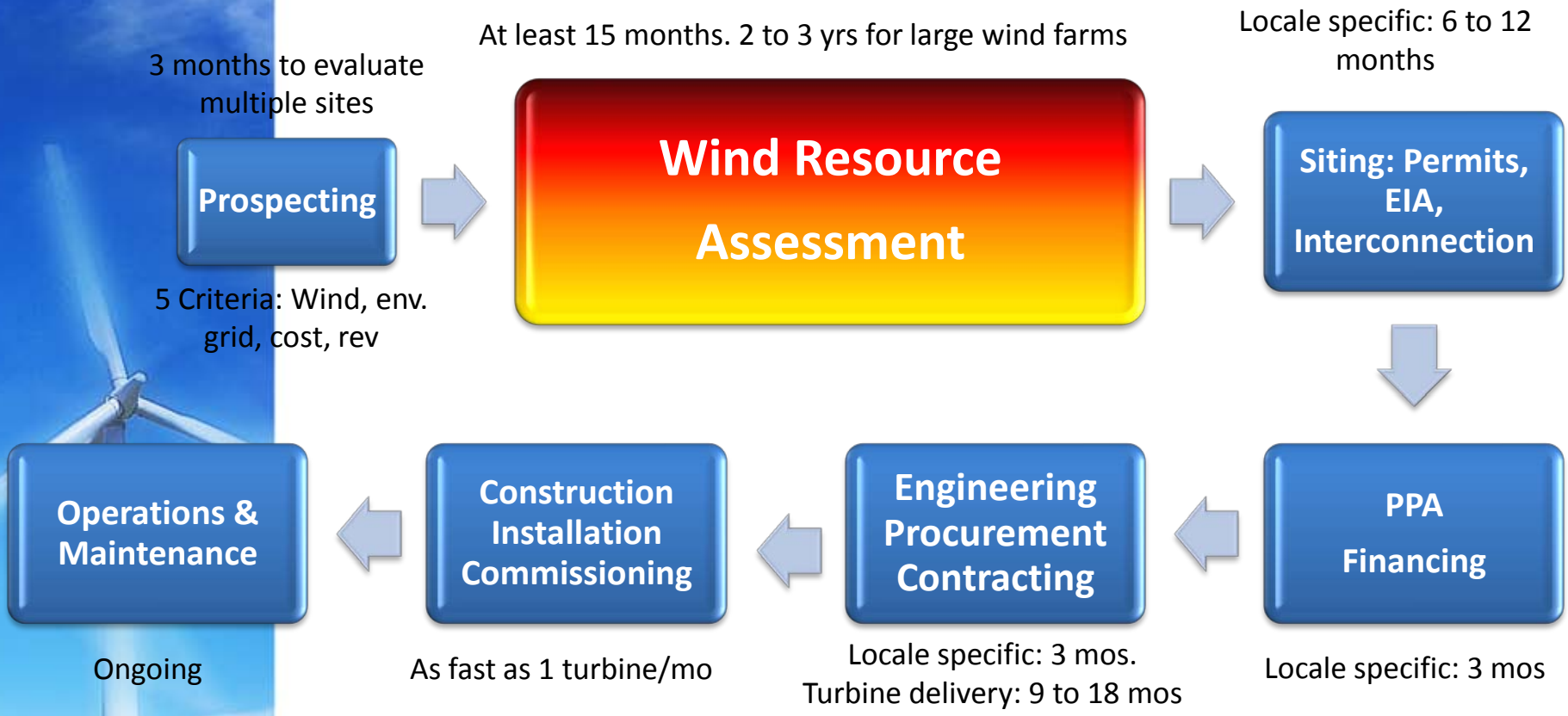
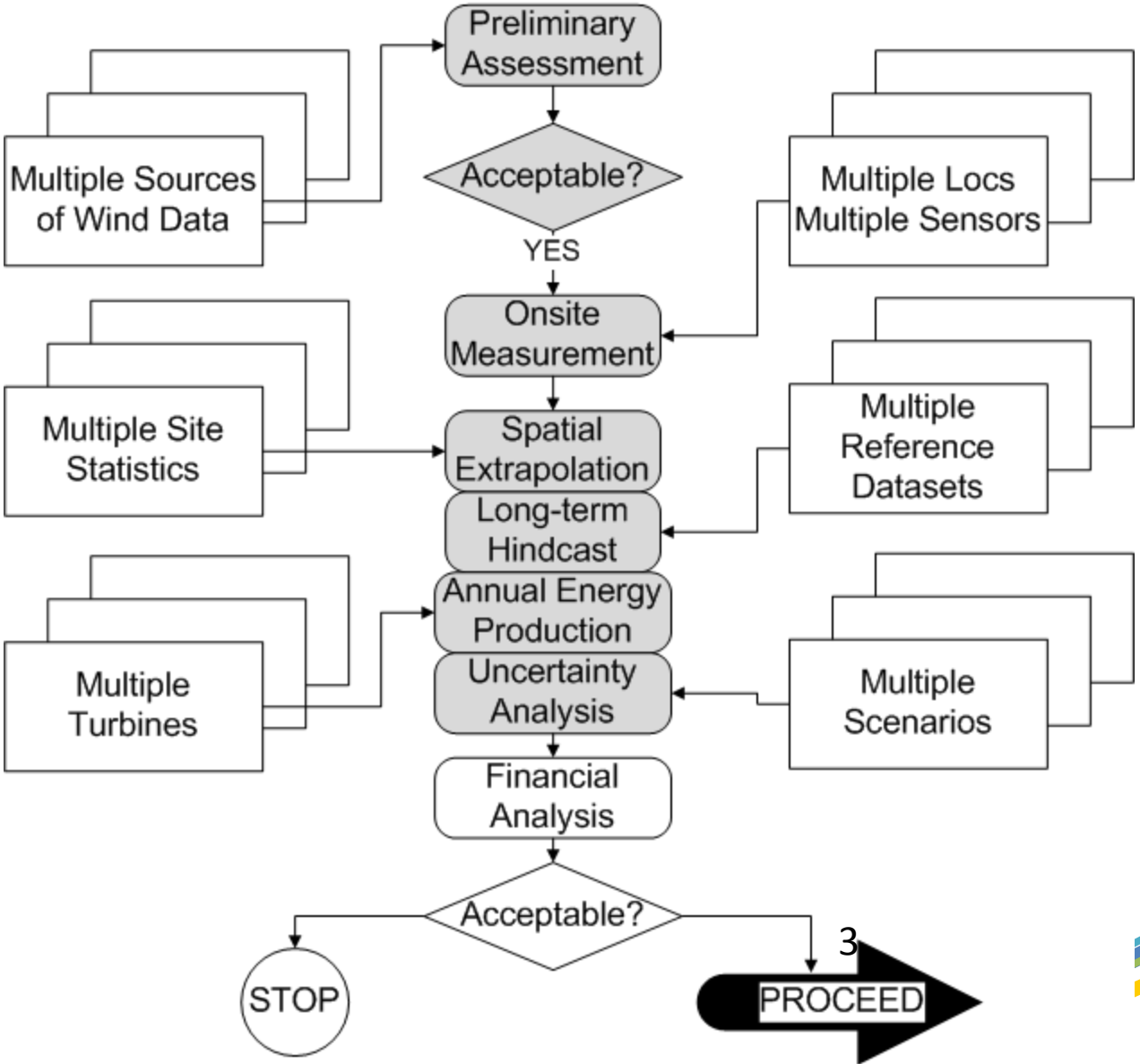
Process of Wind Project Development



Process of WRA



Source: P. Jain, Wind Energy Engineering, 2010

Pre-Development Financing

- Large wind projects
  - Minimum of 100K in funding is required for 10 to 20MW project. Typically 150K to 200K is required.
  - Big issue is timeframe of investment. High degree of uncertainty exists in the initial stages:
    - Investment is done based on anticipated FiT
    - Grid upgrade
  - No financing is available for these kinds of activities
  - Stronger developers with strong commitment may not need assistance

Need for Pre-Development funding Large projects

- Private sector:
  - Case-by-case basis for private developers
  - In general there may not be need for pre-development funding
  - Weaker developers get weeded out because financiers do not fund projects that have not international standards for pre-development
- Public sector:
  - Big need is for government to improve quality of reference and long-term wind speed data
  - Need funds for countries that do not have meso-scale wind map or outdated meso-scale wind map

Pre-Development Financing

- Small wind projects
  - Minimum of 25K in funding is required
  - As a percentage of total cost of project, the pre-development cost can be a big fraction
  - No financing is available for these kinds of activities
  - The motivations for large private investors to enter this market is low
  - Motivation: High failure rate in small projects
  - In this case, there is a need for pre-development financing to ensure that developers do a good job of turbine selection, site selection

Policy Recommendation

- Polices are **key and essential** to attract developers; financing needs to be **country specific**

- Policies need to be **transparent, consistent, long-term and certain** to encourage investments and ensure continuous growth.

- Government has to provide **predictable, holistic and coordinated approach** from planning and legislation, putting in place efficient markets and financing opportunities, effective balancing mechanisms, strong grid and transmission lines, and incentives to drive investments in renewable energy

Policy Recommendation

- Consider **real cost of fossil fuel vs. cost of renewable energy**. Cost of externalities, subsidies to fossil fuels, and carbon taxes should be considered in energy planning.

- **Include private sector** in energy planning through public consultations to enable partnerships.

- Use of **FEED-IN-TARIFF** considered the most effective incentive to encourage investments in renewable energy. The challenge lies in **determining the right tariff level** that balances attractiveness to investors and acceptability to ratepayers.

Rubber meets Road … Policy must fund

- Building/upgrading transmission and sub-stations
- Building capacity within electricity planning and dispatch centers to safely incorporate variable sources of energy, and approve interconnections
- Building infrastructure like roads, bridges, etc. to wind rich areas
- Long-term wind measurement
- Building capacity within environmental & permitting departments to approve wind projects
- Land reforms & development of legal framework to lease public and private land