

WIND INDIA 2006

Topic : Supply Chain and Indigenization of turbine component development

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Disclaimer

- Views expressed by the presenter are personal and not necessarily endorsed by the company, Enercon India.

- This session is about Supply Chain and Indigenization corresponding to the Production, Project set up and installation and not related to Operation and Maintenance, which is a separate arena and needs an independent coverage.



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Current Belief in Business

“It is better to be prepared for opportunity and it doesn’t come rather than not prepared for it when it comes”

Wind Energy is non conventional energy source and therefore supply chain for this business specifically in India is unique and needs many unconventional approaches.



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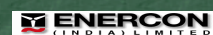


Business model of Wind Energy in India

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Wind Energy Supply Chain

All the material, finance and information with reliable quality should flow in different points in space and time through entire supply chain from sourcing to logistics to manufacturing, resulting in sub-assemblies, machines, blades and direct site material to converge at one point in space and time so that the wind energy converter starts generating rated power at time committed to the customers.



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7 levels

- Land, Foundation & Civil
- Tower
- Generator
- Electrical Controllers
- Mechanical Assembly
- Blade
- Installation - Site materials

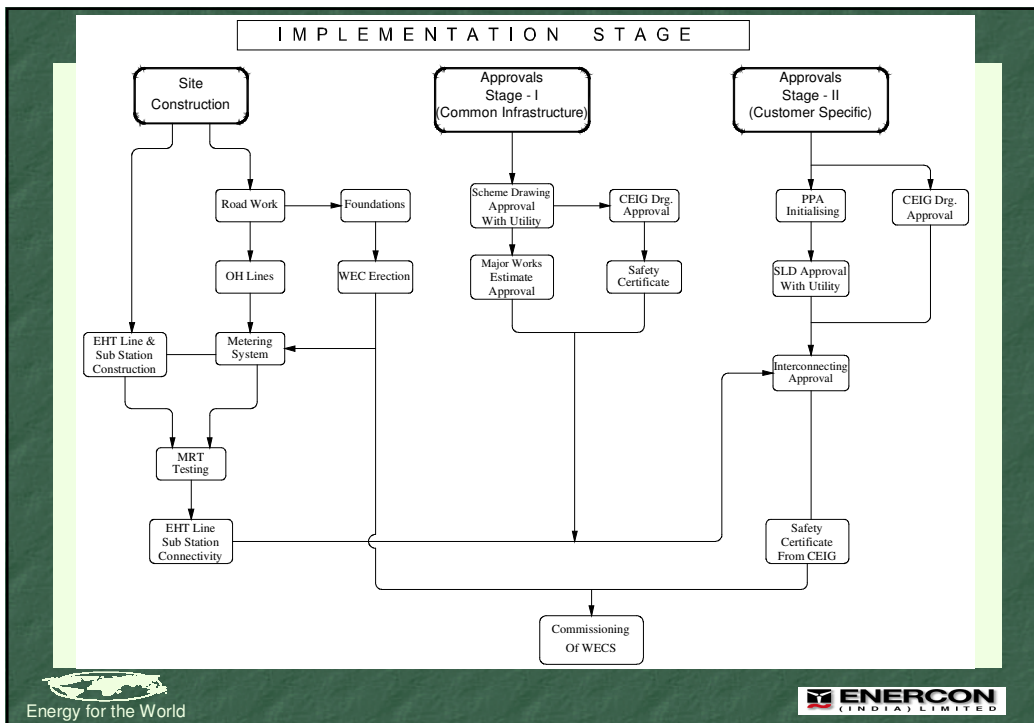
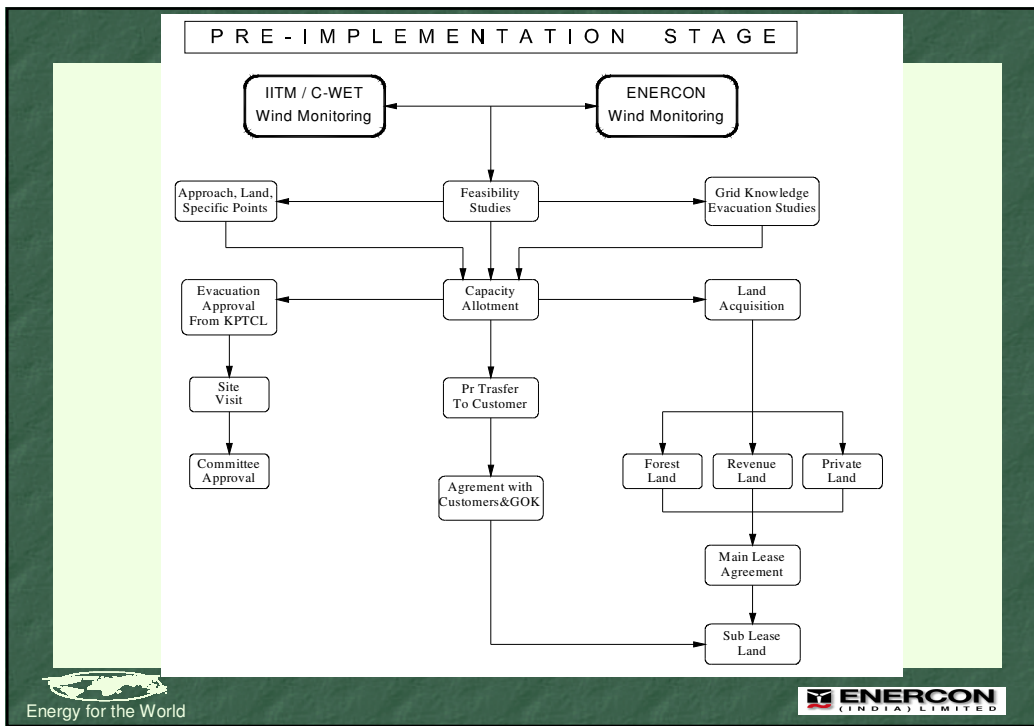
Land – Unique element of Supply Chain

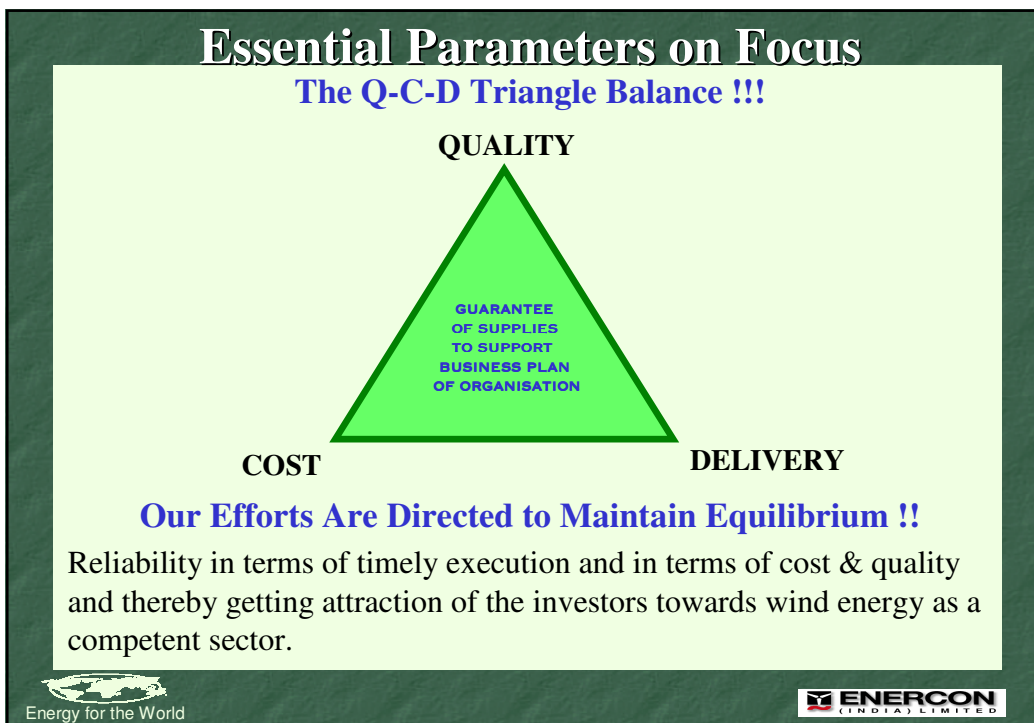
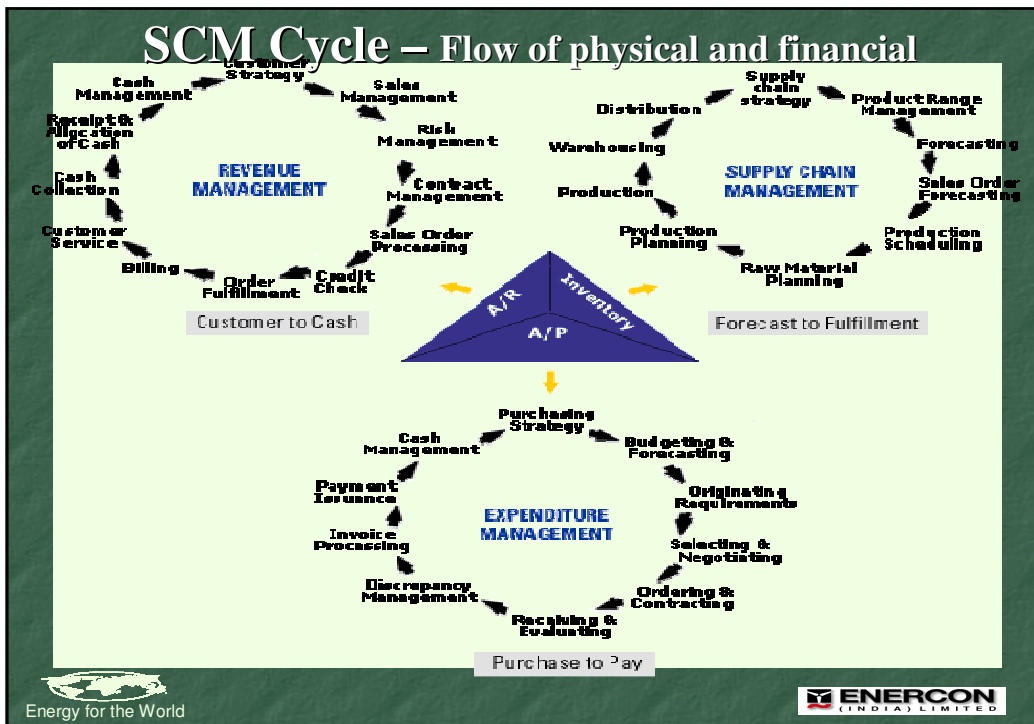
The unique element of supply chain in Wind Energy – Land, which in other sectors is an asset. The Land for Wind Energy needs to be acquired, processed, developed and virtually produced at site so as to make fundamental element of the Supply Chain of Wind available.



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Future of Wind Energy Supply Chain

1. Auxiliary Support Systems :

- Question of whether the auxiliary support system will get matured enough to support for Wind farm development and can Supply Chain look forward to the element being available with strong and matured supporting business partners in the entire length of the supply chain
 1. Wind Assessment & monitoring
 2. Wind farm and land development
 3. Financial Engineering



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Future of Wind Energy Supply Chain

2. Logistics :

The future of supply chain of wind energy is going to be very complex, multi-modal and multi locational (Logistic issue) and to such an extent that working on it can make a difference what profits a company can earn and as the size of Wind Industry becomes bigger and spread across various location this could be more relevant.



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Future of Wind Energy Supply Chain

3. High Volumes :

Towards automated production flows, moving Assembly lines and 'Inventory on Wheels'.



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Future of Wind Energy Supply Chain

4. Co-Creation



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Future of Wind Energy Supply Chain

5. Resource optimization at Global levels



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KITTING OF MATERIALS

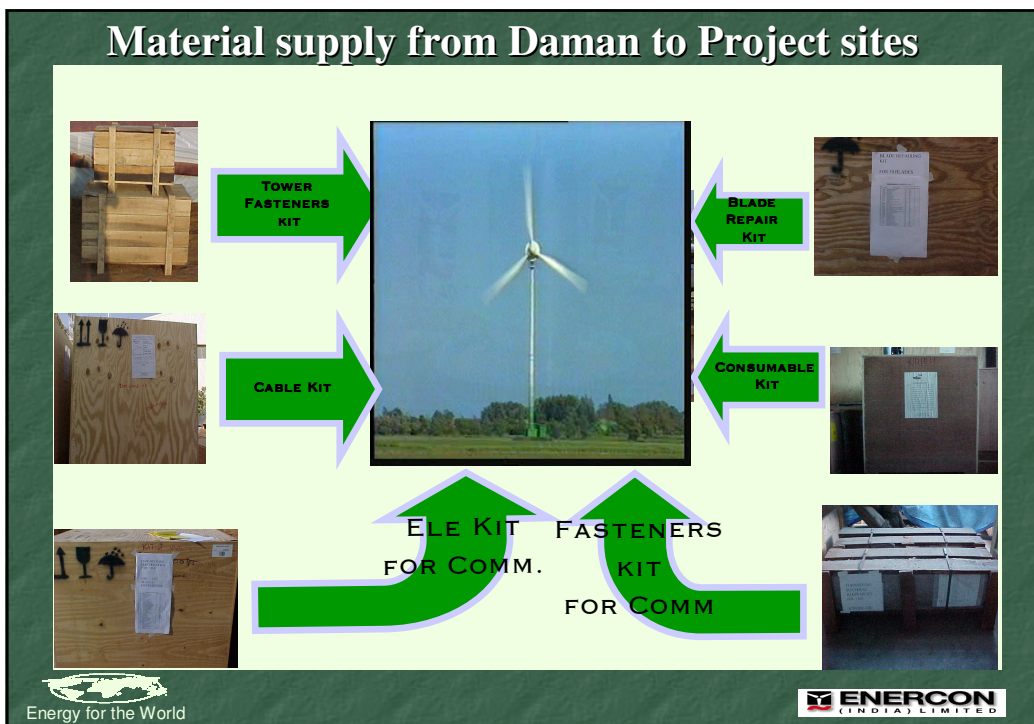
One of best practice used in ENERCON
Right from receipt from supplier – issue – delivery to
projects



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Material supply from Daman to Project sites



Initiatives by Enercon India

INITIATIVE IN IMPROVING SUPPLY CHAIN:

1. REDUCING COST : CROSS FUNCTIONAL COST EFFICIENCY EXERCISES .

2. LOGISTICS : BETTER CO-ORDINATION AND PLANNING - WEEKLY FLOW PLANS.

3. IMPROVING FORECASTING ACCURACY & INVENTORY PERFORMANCE.:

- ERP -SAP IMPLEMENTATION
- SET TARGETS ON INVENTORY NORMS WEEK ON WEEK BASIS.
- REDUCTION IN LEAD TIMES

4. IMPROVING MANUFACTURING EFFICIENCY .: MANUAL PROCESS TO SEMI AUTOMATIC.

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SUPPLY CONSTRAINT OF KEY COMPONENTS : SUPPLY

ENERCON (INDIA) LIMITED

Initiation of a Concept

Forum of Wind Energy component manufacturers and support associates.



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Indigenization



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Drivers for Indigenization

1. Cost
2. Creating additional vendor support
3. Technology transfer
4. Nodes of optimization closer
5. Move towards localization



Indigenization

vis-à-vis

Localization

vis-à-vis

Resource Optimization



Indigenization – Global sourcing

- Initial Focus - Localization.
- Initial perception - to develop locally and avoid any transportation cost and Customs Duty that may incur.
- Since these costs are reducing the focus should be shifted to basic value of the product indigenised and towards localization of the product sourced without affecting and changing the core DNA of the package of the product and service.

The Indigenization would then mean sourcing of component and resources globally which suit maximum in the local condition at a unique region and site, thereby value addition for the customer.



This session is dedicated to...



The Sun and the Earth



**Creator of supply chain of the most important
resource of our Industry - Wind**



THANK YOU

