PPMV Modular Systems

Modular Systems Packaging E-House Solutions

Introduction

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Modular Systems Offering

Product Bundle Solutions

- Single Project Manager
- Supply of product elements
- Integration between Product Elements ie Transformer / Busduct / Switchgear
- Site Support Services

E-House Solutions & Skids

- Single Project Manager
- Supply of fully Operational E-House solution
- Integration between Product Elements ie E-House / Switchgear / DC & UPS / Busduct / EMS / Drives
- Site Support Services

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Modular Systems Positioning within ABB

ABB Contact Point	Scope of Supply	Opportunity Percentage
Product Sales Teams	Transformers Low Voltage Products Low Voltage Switchgear, Motors & Drives Medium Voltage Products Medium Voltage Switchgear, Motors & Drives Basic Distribution Automation	**40**
Modular Systems Team	Product Bundles c/w Project Management (ie MV Switchgear, Transformers, LV Switchgear or Drives, Motors, Transformers) E-House Solution c/w integrated products (ie MV, Switchgear, LV Switchgear, Basic EMS, Drives, 3rd Party Product)	**40**
Systems Centres of Excellence (Industry Specific BU's - Oil & Gas, Mining & Minerals, Pulp & Paper, Power Systems)	High Risk Engineered Plant Systems, with Design & Performance Responsibility for O&G, Power Generation etc Full Turnkey packages c/w ICSS, EMCS, DCS, Fire & Gas Systems MAC & MEC opportunities	20

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Modular Systems Value Proposition

- Risk Mitigation (total integration responsibility)

- Reduced exposure to site issues (E-House solution)

- Reduced client resources to manage the project

- Simplified communications via single project manager

- Direct access to market leading technologies

- Single set of Contract and Terms & Conditions

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ABB Capability Overview

- The Modular Systems Team has in excess of 12 x E-House units operating in Asia, Americas, Middle East and Europe

- This global footprint is strategically mapped to service major EPC's and End Users in target market segments.

- In addition to fixed operating units, Modular Systems has a GET (Global Engineering Team) function, which provides additional resource for Project Management, Engineering & SCM on major projects

- Global Site Services for installation supervision & equipment commissioning.
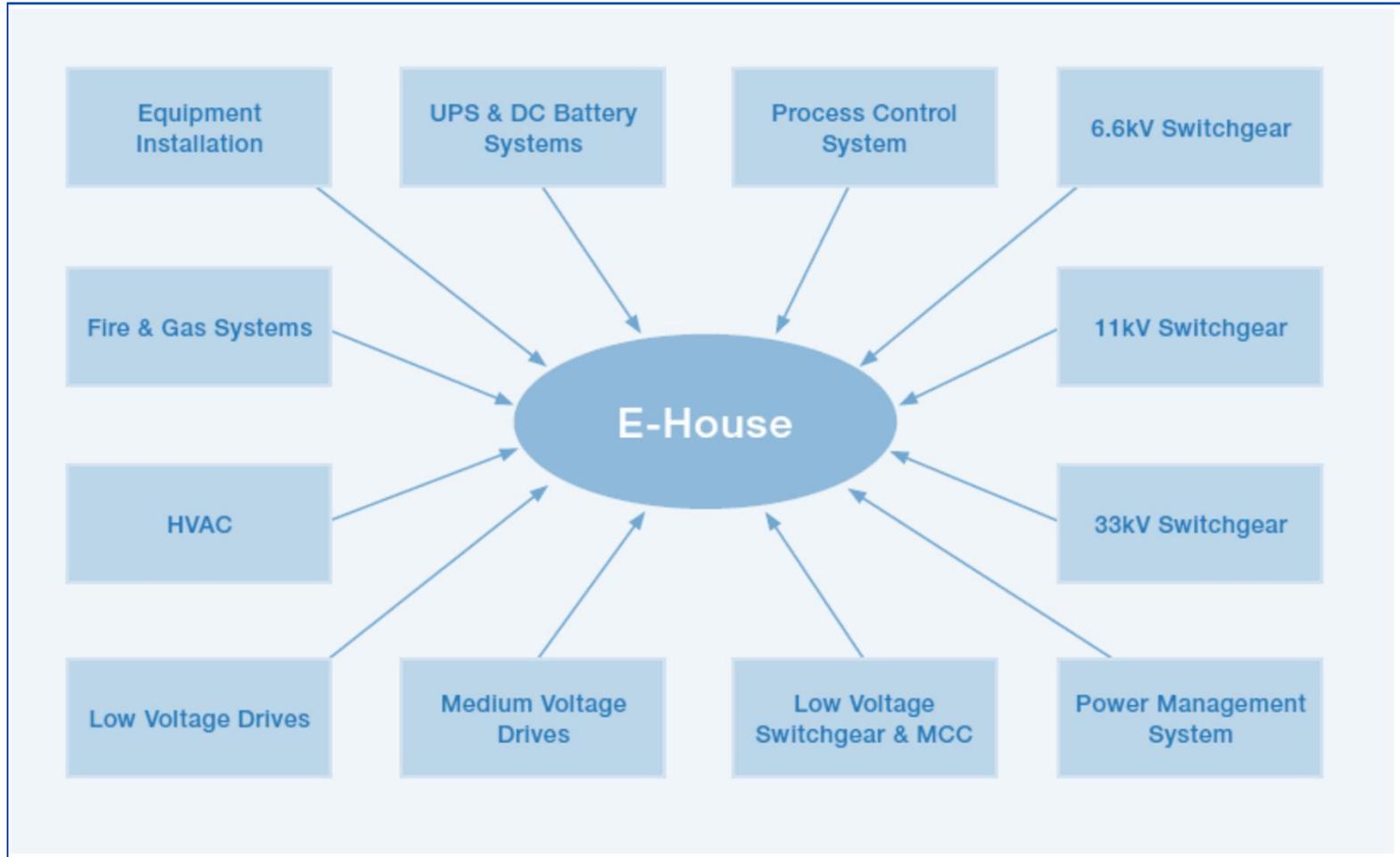
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ABB Project Expertise

- All switchgear equipment compliant to Local Codes & Standards

- All E-Houses designed/constructed and certified in accordance with local building codes & standards

- ABB provides highest level of operator safety (MV Switchgear Arc Duct, LV Switchgear Arc Fault Containment)

- Individual element & total system FAT completed at one location

- Centralised documentation management

- Transport Logistics & Site Assembly

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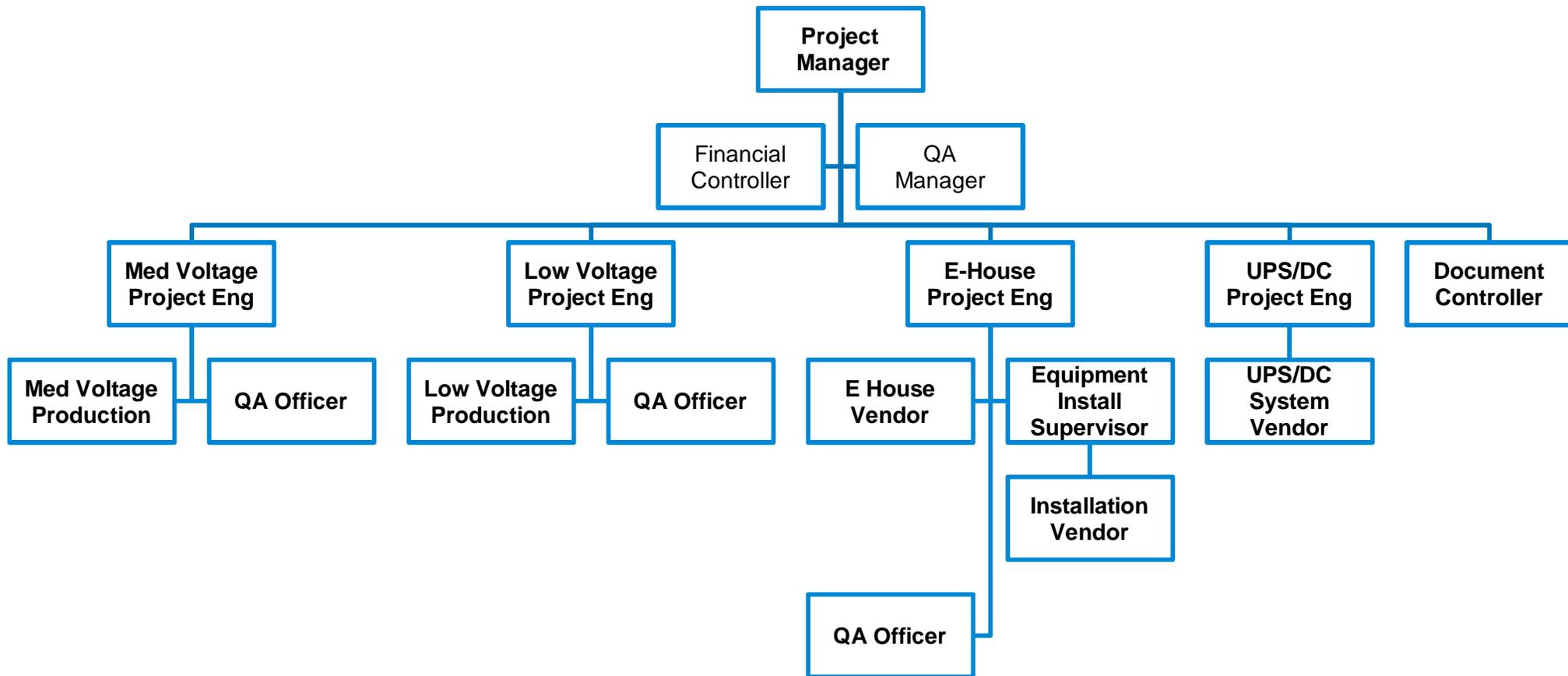# E-House & Product Packaging Applications

- Chemical, Oil & Gas Facilities (Blastproof E-House option also available)

- Utility & Power Generation (E-House, Balance of Plant Switchgear Packages etc)

- Mining (E-House & Equipment Skids for surface infrastructure)

- Process & Industrial Facilities

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Total Project Scope & Integration

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Typical Packaged Project Execution Model

ABB E-House Integration

Project Integration is more than just installing equipment, it commences during switchgear / equipment design stage

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Power & Control Cabling, System Testing

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Heavy Duty HVAC System

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Multiple Product Packaging Ability

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Transport Bracing

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Logistics

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Site Installed E-House Modules

Summary

- Market leader for design, engineering & manufacturing infrastructure

- Compliance to local codes & standards

- Risk Mitigation & Total Integration

- Products Provide high level of operator safety

- Extensive FAT program

- Reduced client resources for engineering & project management

- Local site support for installation, maintaining & upgrading the equipment

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