

E-House solutions for energy industries



- Complete integration across comprehensive electrification solutions for efficient and reliable power
- Prevent blackouts and disturbances while controlling energy costs, enhancing safety and lowering environmental impacts

ABB is a leading solutions supplier of power and automation products for energy industries.

In addition to the supply of leading-edge equipment, ABB provides fully engineered solutions in accordance to the individual needs of each customer.

Unique solution for each plant

A self-contained customized solution

Expertise earned through experience ensures optimized and cost-effective E-House solutions (a pre-fabricated, walk-in, modular, outdoor enclosure, designed to house a range of electrical, automation, telecom equipment and ancillaries) are provided to customers.

Traditionally, companies in energy industries receive their switchgear, drives, periphery distribution equipment and automation systems from multiple electrical equipment suppliers, and obtain the electrical house from a fabricator. However, the need to reduce risk, costs and delivery time has steered the industry away from this practice.

Today, there is a clear trend towards delivering an integrated, installed and pre-commissioned electrical and automation system together with the complete electrical building, commonly known as an E-House. ABB has just the right portfolio to meet this demand and has already delivered many such installations to Canada and the United States.

One stop solution

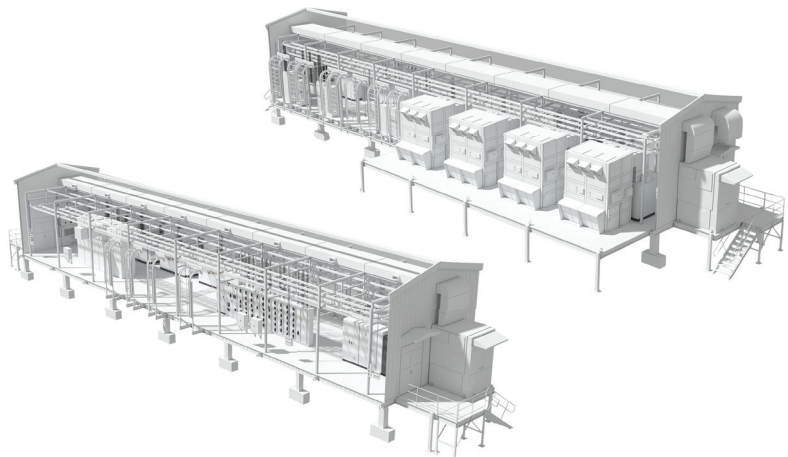
ABB has a complete suite of electrical and automation products required for a complete E-House solution. Coupled with full engineering capabilities ranging from structural, electrical and instrumentation, ABB is able to provide greater flexibility and minimization of interfaces for our customers.

E-House utilities

- Heating, ventilation and air-conditioning (HVAC)
- Fire and gas detection system
- Fire suppression system
- Internal and external lighting system
- PA/GA system

Electrification and instrumentation

- MV/LV switchgear
- MV/LV MCCs
- PLC cabinets
- Instrumentation cabinets
- Distribution transformers
- MV/LV VFDs
- MV/LV switches
- ... and more!



Expertise earned through experience

The footprint, layout and management of E-Houses are indirectly affected by the dynamic changes in industry requirements and the introduction of enhanced systems and products. Over the years, ABB has built up flexibility in its design and execution methodologies that constantly optimize each of these factors to ensure a cost-effective solution is provided to our customers.

Applications

ABB's E-Houses are customized to suit various environmental conditions and applications. ABB's extensive experience and proven engineering, design, fabrication, assembly, testing and transportation allows us to customize effectively in accordance to customer specific requirements. This has resulted in successful projects that meet international standards with the highest level of professionalism.

Offshore E-House buildings

- Floating production storage, offloading (FPSO)
- Floating storage and offloading (FSO)
- Floating liquified natural gas (FLNG)
- Floating power barges
- Wellhead platform
- Processing platform

Onshore E-House buildings

- Onshore oil and gas upstream and downstream facilities
- Petrochemical and chemical plants
- Mining
- Utilities

Benefits

- Low investment risk
- Shorter lead time
- Operational effectiveness and flexibility
- Product life cycle support
- Standardized equipment gives ease of service and maintenance
- Responsibility for interface engineering
- Field proven technology
- Products from a comprehensive portfolio ensuring ease for future modifications
- Engineering application expertise
- Comprehensive documentation
- Professional project management
- Certified in accordance with ISO quality standards
- Occupational health and safety design features
- Single contract for different functional disciplines



Technical details

Details	
Structural codes	As per AP1 RP 2A WSD, CSA A660, CSA A277 for structural, CSA W59, CSA W47.1 for welding
Module analysis software	Using SACS or STAAD Pro software
Structural materials	ASTM A36 or ASTM A53 or EN 10025 (2004) Grade S275JR, CSA G40.21 or BS 4360 grade 43B for beam and plates API 5L or ASTM A106 for tubular pipes ASTM A500 or EN 10219-1:1997 for structural tubing in rounds and shapes
External steel wall	Mild steel crimped plate, thickness in accordance to project requirement
Internal steel wall	Thickness in accordance to project requirement
External roof	Mild steel plate, thickness in accordance to project requirement
Base frame, columns and flooring	Floor thickness in accordance to project requirement Thermally insulated underside Floor construction includes FR coating over the floor insulation
Lift arrangement and devices	Removable lifting lugs provided (CSA G40.21, Grade 350WT, category 4) Single point lifting arrangement provided
Wall mounted equipment	Equipment, panels and cabinets secured by steel angels or 'u'channels
Fire and blast rating	Exterior wall, roof and underside insulated with non-combustible mineral wool, ULC-rated (ex: W605 / W611) Internal partitions and internal roof insulated with metal liner panels and Rockwool All external and internal doors and frames are made of SS316 material and designed according to A60 fire rating

Electrification and instrumentation	
Emergency lighting	Emergency lighting with battery power pack
Multiple cable transit (MCT)	Mild Multiple cable transits provided
Cable ladders/trays	Outdoor cable ladders/trays are made of SS316L material Class E aluminum Hot dipped galvanized for indoor
Switchgears	Designed based on project requirement
Transformers	Designed based on project requirement
Drives	Designed based on project requirement
UPS and DC supply	Designed based on project requirement
Bus ducts	Designed based on project requirement
Automation	Distributed control system and safety system, designed based on project requirement
Heating, ventilation and air-conditioning (HVAC)	Ex'd or non-Ex'd rated 2 x 100 % HVAC unit Split air-conditioner with climate control for specific applications Zone 1 ventilation system for battery applications Ventilation system for transformer and drives applications HVAC and electric heaters wired to Building Automation System (BAS)

Fire protection system and communication system	
Fire detection system	VESDA smoke/heat detectors and manual call points will be installed and wired up to fire alarm panel (FAP) All fire alarm panels are connected to the main FGS panel
Fire suppression system	Inergen or CO ₂ system Portable CO ₂ fire extinguishers provided at each entrance throughout the E-House
Warning sign	Warning sign for the discharge of fire extinguishing agent provided
Communication system	Communication equipment is provided throughout the E-House meeting the requirements of the certification
Lighting	Internal and external lighting

ABB values

It's in our DNA

Safety values and expectations

The active management of health, safety and environmental risks is a natural extension to our business, and it is ABB's policy that no person shall suffer injury or ill health as a direct consequence of ABB's Industrial undertaking. Our goal is zero incidents and minimal environmental impact.

Integrity

ABB is committed to a high standard of integrity which is expected of every employee and in every country where we do business.

For the past several years, ABB has been recognized worldwide for ethical business practices by the research-based Ethisphere® Institute, a leading international think-tank dedicated to the creation, advancement and sharing of best practices in business ethics, corporate social responsibility, anti-corruption and sustainability. Ethisphere provides the only third party verifications of compliance programs and ethical cultures that include World's Most Ethical Companies, Compliance Leader Verification™ and Anti-Corruption Program Verification. ABB has earned all three.

Sustainability at ABB

Sustainability considerations cover how we design and manufacture products, what we offer customers, how we engage suppliers, how we assess risks and opportunities, and how we behave in the communities where we operate and towards one another. This includes constantly striving to ensure the health, safety and security of our employees, contractors and all others affected by our activities.

Sustainability and integrity are a key part of ABB's Supply Chain Management strategy. You can read more about our aims, policies and performance, at new.abb.com/about/supplying



ABB Employment equity

We are global technology pioneers in a company with a proud 125-year history. Thanks to deep roots in many different countries and cultures, diversity has been part of our DNA from the beginning. Today, we are working hard to deepen this commitment and ensure that ABB's workforce, policies and practices bring out our best.

ABB's decisions regarding the recruitment, hiring, promotion, compensation, employee development and all other conditions of employment are taken regardless of race, color, beliefs, values, generation, physical differences, sexual orientation and gender.

A partnership you can rely on

ABB believes in long term partnership built through credibility and expertise.

Market credibility

ABB adheres to our Code of Conduct, which contains our core set of values and guiding principles. It sets a group-wide culture where employees are expected to uphold the highest standard of ethical behavior and integrity. This translates to high business ethics and integrity to our customers.

Engineering

Customers can be assured of the highest engineered E-House solution by a team of highly competent engineers with backgrounds ranging from structural and electrical engineering, to automation and instrumentation.

These multi-discipline engineers are responsible for front end engineering design to detailed engineering design. ABB also ensures every project goes through rigorous engineering good practices and adheres to international or industrial standards.

Service

ABB believes in smooth transition from project execution to post-execution support, to minimize support disruption to customers. We are able to provide customized service plans based on our customer's needs. These include troubleshooting, 24/7/365 hotline support, spare parts delivery, repairs, system upgrades and maintenance.

Project Management

ABB understands project management is a key driver for value creation throughout the project life cycle and fulfills the expectations of the customer and other stakeholders. Hence, all project managers go through rigorous training and are certified before they are tasked with project responsibility.

A dedicated project manager will be assigned to the project from the initial design phase right up to the construction phase, where he will be assisted by a site/construction supervisor or manager.

Construction and site management

Health, safety and environmental issues are of utmost importance to ABB. Hence, a site/construction supervisor/manager is assigned once the project moves to construction phase. He will be in charge of managing site related issues, including maintaining safety at site and adhering to the OHSAS 18001 standard.





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