

Renewable Energies
Capability Statement



Technical Training	Field Development	Subsea Systems	Subsea Pipelines	Floating Structures
Marine Risers	Flow Assurance	Advance Engineering	Renewable Energies	Integrity Management

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1.0 Introduction

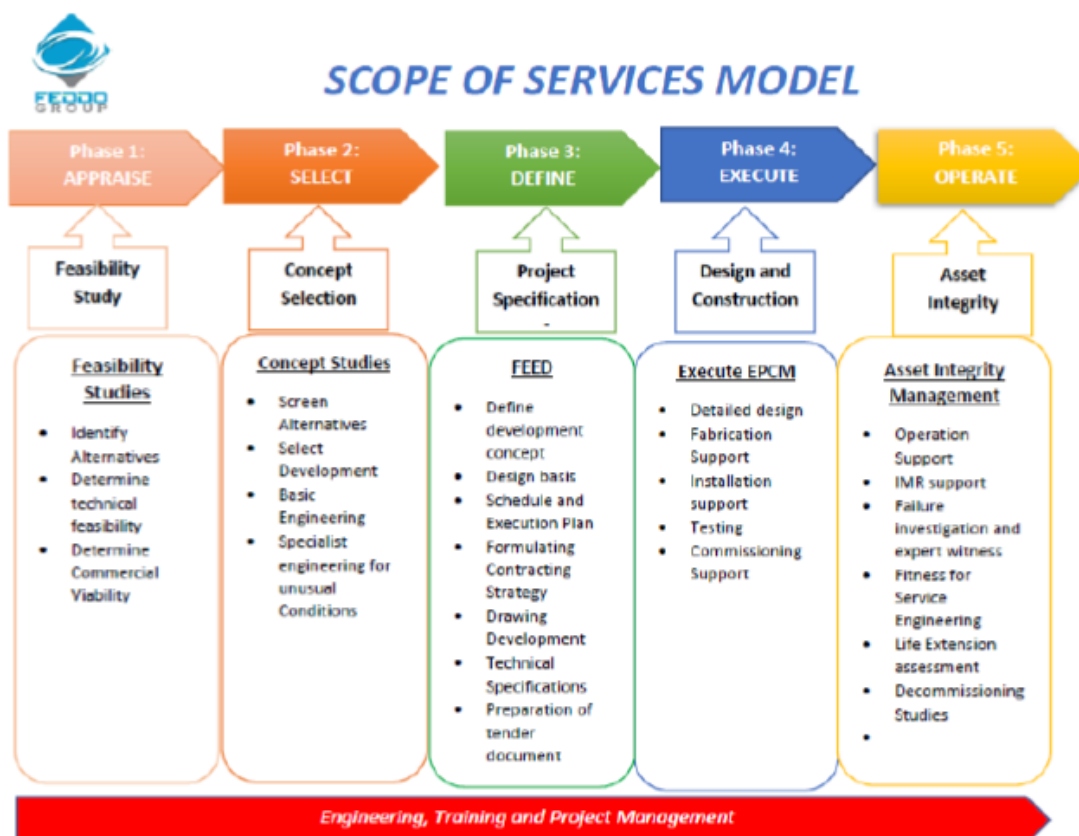
FEDDO Group was established in 2013 as a Global company, registered and headquartered in Australia (Perth)

The main aim is to serve the Energy and Mining sector, providing a range of Consulting Services to the Industry which includes both the Oil & Gas sector, Metal and Minerals and the Renewables sector. FEDDO GROUP specializes in offshore engineering, subsea field developments, subsea and Onshore pipeline systems, integrity management and pigging, life extension, decommissioning, and construction management. We also offer technical training solutions to develop skills and capabilities for the whole life of field covering every aspect of design, operation, integrity management and maintenance.

FEDDO GROUP business model works on a network of regional engineering centres which enable specialised skills, knowledge and expertise to be shared across its global operations.

Our global operational head office is located at Perth, Australia covering Australia and Asia, FEDDO GROUP also has operating offices in Houston, covering the Americas, London, United Kingdom, covering Europe; and Lagos covering Africa, apart from these we have commercial presence (Marketing office) in Kuala Lumpur mainly for South east Asia Region; Abu Dhabi targeting Middle East Region.

It is our practice to work with client to turn complex situations into positive practical results, by bringing professional insight to support critical business decisions. We work in all phases of project development from appraise, select, define to execute and operate.



FEDDO GROUP provide system engineering comprising the following disciplines:

- Technical Training Solution;
- Field Development;
- Subsea Systems;
- Subsea Pipelines;
- Floating Structures;
- Marine Risers;
- Flow Assurance;
- Advance Engineering;
- **Renewable Energies;** and
- Asset Integrity Management.

This document provides details of our capabilities in **Renewable Energies**



2.0 Renewable Energies Engineering Capabilities

FEDDO GROUP' capability in Renewable Energies is founded on our leading industry personnel, with experience to develop innovative solutions. Our personnel have experience in the Design, development and evaluation of the suitability of renewable energies.

FEDDO GROUP's capabilities in Renewable Energies include the following aspects:

- Through life cycle engineering
 - Appraise, Select, Define, Execute, Operation Support, Decommission
- Evaluation of Renewable Energy types
- Prediction of Power generation
- Selection process for renewable Energies
- Design of the selected Renewable Energies
- Cost for Renewable Energies
- Operating issues for Renewable Energies
- Provide Independent Advice
- Training courses for the range of renewable energies.
- Power generation from offshore sources.
- Design, development and evaluation of the suitability of renewable energies

3.0 Can Renewable Energy Replace Oil and Gas?

What are the options?

- Solar Systems,
- Wind Turbine Systems,
- Geothermal Systems,
- Biomass Systems,
- Hydro Systems,
- Hydrogen Fuel Cell Systems,
- Other e.g. Nuclear, Tidal & Wave.

If we were to replace Oil and Gas in 25years then what would we need to do?

- US Daily Energy Consumption per capita is approximately 11KW.
- If World Average was 5KW.
- Current Total World Consumption of Carbon based Energy would be 35TW.
- Nuclear: Would need 3.8 Nuclear plants (1 BillionW) to be built per day.
- Wind: Would need 53 Turbines (3MW) to be built per hour.
- Solar: Would need 255 m2 installed per second.
- Bio: We would starve first.

In addition, the infrastructure costs for renewable energies could be economically prohibitive at present.

What predictive tools are required to make the correct decisions?

Learn more about the alternative renewable energy options and how these can benefit you through knowledge, predictive techniques, innovation and usage

4.0 Training Course

This training course provides not only an introduction into the issues associated with the development of Renewable Energies but also provides an in depth understanding of the issues to be considered in the development of these energy systems. The theme throughout this training course is Renewable Energies and Innovative Technologies.

The workshop during the course evaluates the energy options in order to establish an energy strategy for the proposed system.

The methods of selecting the available enabling and emerging RE technologies for application to both commercial and domestic systems are presented.

Selection and Sizing of Renewable Energies Technologies.

- Establishing an Renewable Energies Selection Process.
- Commercial Application
- Domestic Application
- Establish a Sizing Criteria
- Performing Power Generation Calculations.
- Establishing the System Layout Configuration
- Predicting the Space Requirements.
- Sizing Each Component.
- The final part of the workshop analysis is undertaken that includes the selection and sizing of the best Renewable Energies technologies for the application being considered for development.
- Analysis and benefits of each of the Renewable Energies technologies considered is undertaken along with the associated risks in its deployment for the life of it's usage.

5.0 Research and Development in Renewable Energies

FEDDO GROUP have recently completed a feasibility study to assess the use of depleting gas fields to generate renewable energy offshore applicable to the UK North Sea sector as well as Worldwide.

The feasibility study has shown that the proposed method of generating renewable electric power on the seabed is significantly more cost effective than offshore wind generated power. Other major benefits are that it is not intermittent and can be controlled to match the demand profiles as required. It is also an enabling technology to accelerate the recovery of oil and gas by providing local power offshore for wet gas compressors for example.

The concept now requires a prototype to be built or a field application on an existing depleted gas field. We believe that this technology could extend the life of offshore oil and gas assets significantly and hence reduce or delay the decommissioning of assets in the North Sea / World.

We are currently looking for interested parties for funding for the next phase of the technology development.

6.0 FEDDO GROUP Renewable Energies Experience

FEDDO's senior technical team consists of industry experts with extensive international knowledge and expertise in challenging environments. Members of this team have worked on some of the most innovative projects of their time

For Further information:

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