



WEIGHT AND COST

- ESTIMATING AND CONTROL

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RAMBOLL

ESTIMATING WEIGHT AND COST

RAMBOLL OIL & GAS SPECIALISES IN WEIGHT AND COST ENGINEERING, INCLUDING MONITORING OF MASS, LOAD AND STABILITY THROUGHOUT THE LIFETIME OF ALL OFFSHORE STRUCTURES. THE COMPANY PROVIDES SERVICES WITHIN ESTIMATION, VERIFICATION AND BENCHMARKING USING ONE OF THE MARKET'S MOST EXTENSIVE KNOWLEDGE DATABASES FOR WEIGHT AND COST.

With more than 20 years of experience in weight and cost estimating and weight and quantity monitoring, we can assure our clients expert support. Our estimates are relevant for early concept studies, engineering, construction, operation and modification. Regardless of your project, our precision estimates offer one of the best insurances for success in concept decision, planning, management and documentation for weight and costs on the market. Our valued and longstanding clients Statoil and ConocoPhillips have reaped the many benefits associated with their use.

Feasibility study

Ramboll Oil & Gas provides feasibility studies to the oil and gas industry comprising technical and

commercial analyses and evaluation of different alternatives to optimise and develop new projects. Based on information from oil and gas fields, Ramboll Oil & Gas develops flow diagrams, concept layouts and master equipment lists. Further, we produce weight and cost estimates utilising our large historical databases from the North Sea.

WEPS - weight and cost estimating

One of the cornerstones of our business is the in-house developed weight and cost estimating software system WEPS, which stands for Weight and Cost Estimation, Platform Screening. WEPS is basi-

cally a high quality estimation tool relying on an extensive database of as-built project information.

WEPS' high precision ratio allows our clients to make well-founded concept decisions, increases efficiency in project execution, decreases project risks and ensures successful management planning. The WEPS system is fed with key data such as the field's forecasted oil and gas production and is then able to calculate project specific requirements such as equipment lists, area requirements, dry weights, costs, man-hours, norms and rates. These data may in turn be fed into WEPS, level 2, and new calculations be made resulting in unsurpassed precision levels.

DATABASE FACTS:

The historical cost database consists of data based on more than 100 module construction contracts from a large number of development projects, covering man-hours, cost and weight information from final close-out reports and as-built data.

The historical weight database consists of more than 50 topsides which are detailed to the lowest level and in a format adapted to perform estimates in the WEPS system. Included are numerous parameters from process, drilling, topsides facilities, accommodation as well as weights, areas and volumes

MON

- monitoring and control of weights and centre of gravity

For topsides projects, Ramboll Oil & Gas has developed the software system MON for monitoring and controlling weights, loads and centre of gravity (CoG) as well as quantities and costs of topsides for all offshore structures and vessels. MON, which stands for MONitoring, follows industry standards.

MON provides weight details for all phases of a project from detailed design through fabrication, installation, operation and decommissioning. The system's flexibility in terms of item selection makes it easy to generate the specific report(s) a project calls for at any given time. So, with MON our clients get an inexpensive insurance against stability problems, structural overloads as well as budget overrun and failure to meet deadlines.



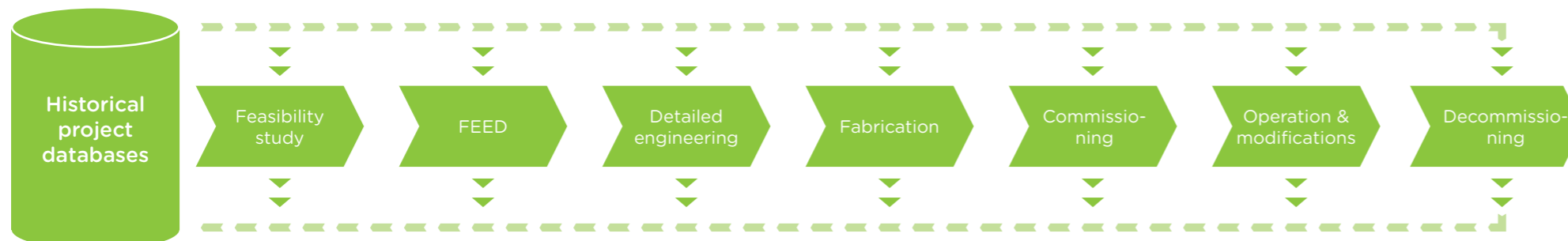
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DATABASE FACTS:

Items are categorised by area code, discipline code and drawing no. They are stored with dry weight and content weight and coordinates relative to a predefined point of origin.

Module support point data are registered in MON, which then generates reports with loads for every defined support point, including all large equipment and bridges suitable for structural analysis or re-analysis (SRS).

In sync with customer requirements, both systems are continuously being developed and refined.



About Ramboll

Ramboll Oil & Gas provides highly specialised engineering consultancy services to the worldwide oil and gas industry. We employ close to 1,000 dedicated oil and gas specialists and have 30 years of experience in the offshore industry. Ramboll Oil & Gas is part of the Ramboll Group, a leading European consultancy founded in 1945 with a broad foundation in all engineering and design disciplines counting some 10,000 employees in 19 countries.