



ECN

Your energy. Our passion.

On the way to perfect O&M

Maximum availability at minimum cost

Operating and maintaining an offshore wind farm currently represents roughly 25% of the cost. The primary reason for the comparatively high O&M costs is the challenging marine environment and difficulty of access. Over the last decade, ECN has played an essential role in lowering O&M costs. The products currently available and in development will continue to drive costs down.

Sophisticated cost modelling tools and methods developed by ECN are used during the early conceptual, detailed planning, and operational phase. Customers benefit from the O&M data and strategic recommendations that ECN provides. Nearly every major wind farm developer, operator and turbine manufacturer is an ECN customer. Consequently, ECN has been involved in almost 80% of all offshore wind farms. We are proud to be recognised as the leading R&D company in offshore wind O&M and we deliver tailor-made solutions to match every customer's specific needs.

In addition to O&M strategy, optimisation and overseeing costs, ECN enables operators to move away from costly and unexpected corrective maintenance, and replace it with predictive maintenance. Based on its unique Fleet Leader system, risk areas in the farm can be identified, based only on monitoring from a few key turbine locations. This cuts down on monitoring and installations costs and facilities preventative maintenance.

What can ECN offer you?

- Industry-leading OPEX cost modelling for business planning, O&M optimisation and contract negotiations
- Key expertise at any stage in the wind farm project
- Assistance in moving towards preventative rather than corrective maintenance
- Maximising the value of existing operational data
- Strategic planning that works for local government incentives (e.g. phasing of wind farms)
- Assistance in investing and setting the specs for new access and support vessel systems

In negotiating maintenance contracts, wind farm developers and operators need to anticipate what kind of information they will need from turbine companies. ECN facilitates effective dialogue between turbine manufacturers and wind farm operators, ensuring cost efficiency and balancing operating costs against power output.

Supporting efforts to substantially reduce the costs of offshore wind energy, ECN plays a key role in more efficient maintenance programs and integrated application of wind farm system expertise. With its extensive experience in R&D, ECN is always ahead of the curve in implementing the latest technologies to serve its customers.

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ECN O&M products and services

OPEX service and cost modelling

The “ECN O&M Tool” has become the industry standard and allows customers to work out effective O&M scenarios. Key input parameters like weather data, vessel details, turbine parts and failure frequencies, BOP details etc. are used to estimate downtime, maintenance costs and energy yield under different scenarios. Data from a demo wind farm with representative turbine values is included, making the tool an invaluable asset for training skilled maintenance teams.

The more sophisticated and state of the art “ECN OMCE Calculator” is the complimentary follow up. Operating in the time domain, the software allows much more accurate modelling with high degrees of flexibility and resolution. The OMCE Calculator was designed to incorporate actual operational data and is therefore perfect for the operational phase. However, the extra accuracy the tool provides also makes it invaluable pre-operation for business planning. With an offshore asset of more than 1 billion in value, every tiny percentage of added accuracy results in massive savings. Customers can use the tools themselves, though consultancy and training is recommended to get maximum value from the tools.

Maximising data value and achieving operational excellence

ECN has developed the “OMCE system” that maximises the value of your operational data. Wind farm data from SCADA systems, written reports and numerous other sources are structured and analysed, providing key information for O&M strategy, planning and identifying cost drivers. Customers feed the latest results back into the OMCE Calculator tool to fully optimise and continuously improve wind farm operation strategy.

Effective stock control

ECN cost modelling tools and data analysis services make it possible for customers to identify how and where problems arise, calculate the expected failure rate, and decide how many spare parts need to be kept in stock. This cuts down on unnecessary waiting time, purchase, storage, and other costs.

Anticipating and dealing with changing legislation

National and international government policies can dictate how wind farms are built, such as the introduction of the Contract for Difference (CFD) model in the UK. Under this scheme, wind farm phasing is encouraged if the incentives are to be reached. This can totally change the way to think about the O&M strategy. ECN can play a vital role in helping companies devise strategies to cope with legislative shifts.

Shift towards preventative maintenance

A focus on preventative rather than corrective maintenance drives down costs and optimises performance. Unique in the field, ECN’s Fleet Leader identifies the turbines that are most heavily loaded and fatigued, making it possible to schedule maintenance and minimise downtime, before problems occur.