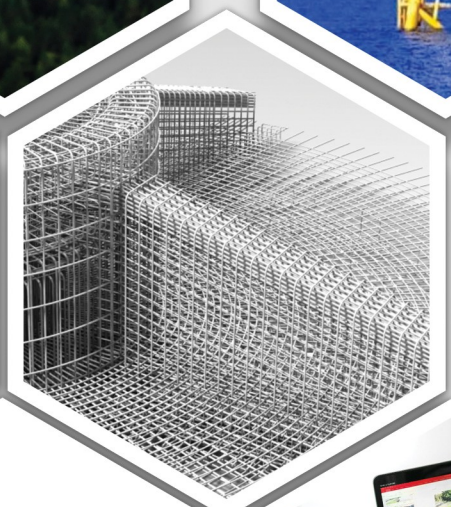
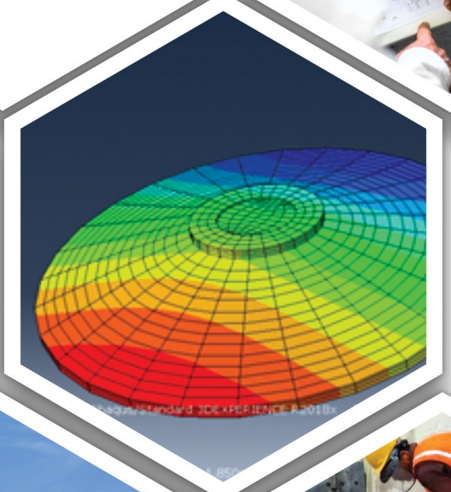







NeXHS
Next Generation Hybrid Structures

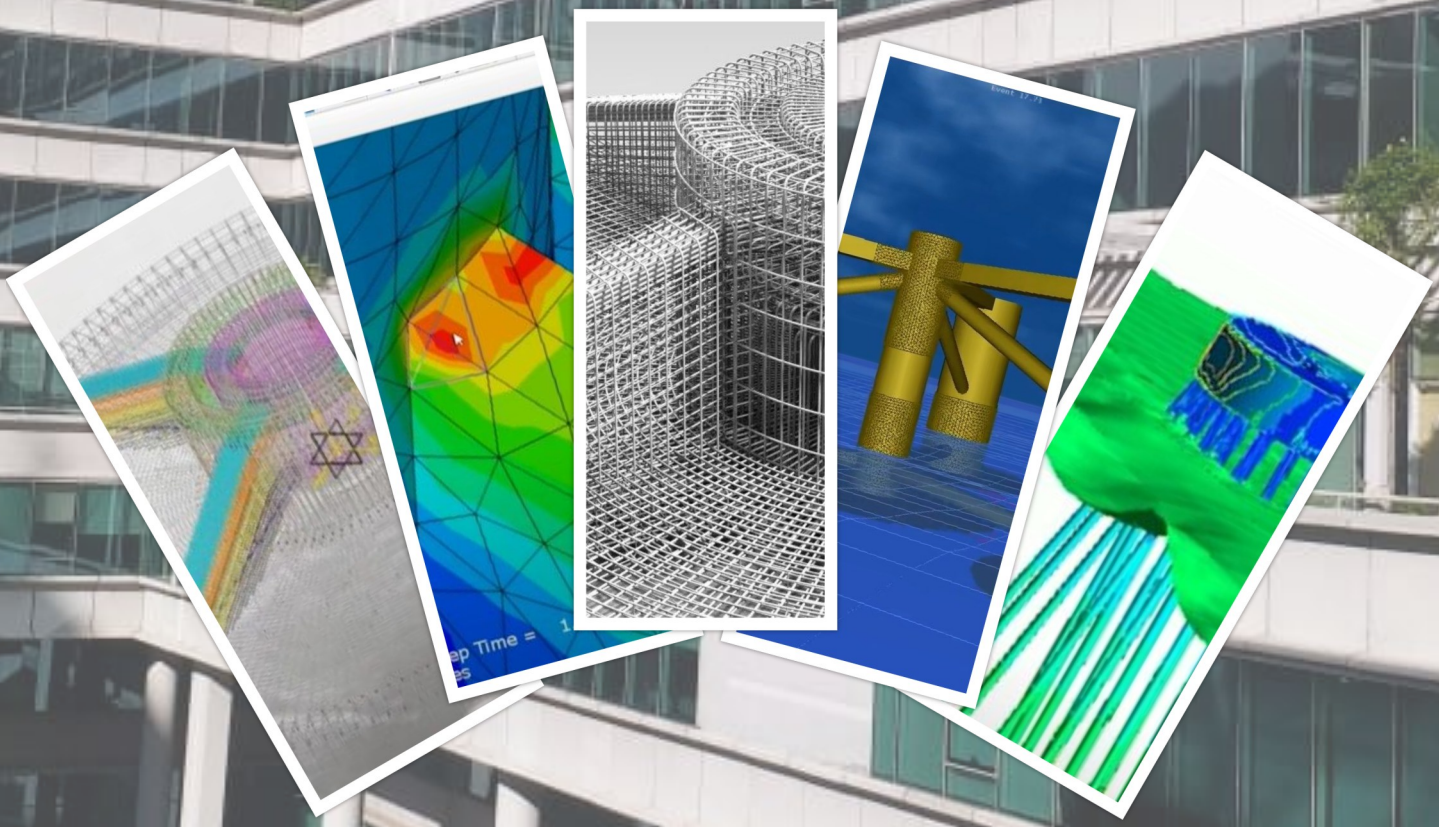





"Come out with Complex Problems and get Simply Supported"

ABOUT US

We are a team of Structural and Geotechnical professionals having extensive experience in structural designs of Metro, Airports, Hydel power projects, Bridges, Projects involving Complex Geotechnics, Wind Turbine structures, Rehabilitation / Retrofitting of Structures, Solar structures and many more. We are experts in the optimal design of structural systems of wind turbines subjected to dynamic loading by using state-of-the-art finite element method. We use in-house developed tools and programmes for dynamic analysis of the structural systems of wind turbines. Our design strategy is based on optimisation of foundation design considering structures as interacting elements with soil and analysing them as finite elements using the best FEA tools such as ABAQUS Unified, Plaxis 3D, ANSYS Fluent, MATLAB, etc.,



SIMULIA Abaqus · MATLAB · SOLIDWORKS · MIDAS · ANSYS · STAAD.Pro · PLAXIS · DNV sesam Portal · CATIA

ISO certified

ISO 9001:2015
ISO 14000:2015
ISO 45000:2018

SECURING THE FUTURE THROUGH RENEWABLES

OUR MISSION

Our mission is the transition of world, a world where there is no usage of fossil fuels and the world would totally rely upon renewable energy resources, reducing the environmental pollution.

OUR VISION

Our ethics and values are driven maintaining integrity in all relationships. We emphasize on teamwork, innovation and sustainability when it comes to our core values and ethics.

OUR VALUES

We support the environment from depletion of non-renewable resources. And, taking a new initiative, we encourage the usage of renewable resources.

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WHERE ENERGY MEETS OPTIMIZATION

Our Design Philosophy is to optimize the foundation design by maximum utilization of local resources available at site in our designs. Understanding the soil dynamics and its interaction with structures using Innovative tools and Finite Element Analysis techniques, we are able to reduce the requirement of steel and concrete in foundation designs and comfortably meet design requirements as per IEC and applicable codes.

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RESEARCH AND DEVELOPMENT

NeXHS has a designated R&D Centre with a plush greenish eco-friendly working environment located at **IIT Madras Research park, Chennai, Tamil Nadu, India** which helps us to extract the most out of Industry Academia Collaboration – harnessing the expertise of 16 Departments, over 600 Globally acclaimed Faculty, 3,500 Research Scholars, Hitech Laboratories, testing facilities, Innovation Centres and Students of IIT Madras which is the bee-hive of brilliant minds of India and it is also said to be the Home to India's leading deep-tech start-ups.

Our R&D Team have developed special analytical tools that help enable us optimize foundation designs with limited iterations for any given loads and soil conditions. They have experience of designing over 50 foundation designs for wind turbines which have been successfully validated by institutions such as SERC, UL (formerly known as DEWI) and DNV-GL. We run research and development programs partnering with OEMs for standardization of foundations and concrete tower designs for an array of soil and wind conditions for each turbine type.

ONSHORE WIND

Foundation

- *Standard Circular*
- *Wall type - Four & Eight*
- *Pile foundation*
- *Rock Anchor*
- *Turtle foundation*
- *High Rise foundation and more...*

Towers

- *Steel tower*
- *Concrete tower*
- *Lattice tower*
- *Hybrid tower*
- *Braced Hybrid tower*
- *Space frame (Hexa-pylon with craneless operation)*
- *Split tower and more...*

Our Extended TECHNOLOGY SERVICES

- *Drone Technology for Damage detection & Quality control*
- *Life Extension of WTG through fatigue analysis & Repowering solutions*
- *Modern Construction materials like Green Concrete, etc.,*
- *Drivability Studies on Onshore & Offshore Piles*
- *Wind farm Optimization*
- *Met mast design and detailed Wind Resource Assessment (WRA)*
- *Geotechnical Investigation & Studies*
- *Simplying complex Logistics*

OFFSHORE WIND

Foundation

- *Gravity foundation*
- *Steel Monopile foundation*
- *Hybrid Monopile foundation*
- *Tripod foundation*
- *Floating foundation*
- *Jacket Structures and more...*

Specialised Offshore Wind Energy Structures

NEXHS has wide-ranging experience within design services associated to the design of offshore Wind turbine foundations through participation in a sequence of large-scale offshore wind farm (OWF) projects including the first demonstration project in Vietnam. We have carried out vast no. of research and numerical studies for optimising foundation technology in deep and shallow waters. Our state-of-the-art FEA coupled with CFD and Aerodynamics of the structure enables us with greater understanding of the structural requirements to make it Robust, safe and with greater degree of optimization. These projects not only pose challenges but do have a higher degree of complication on both technical and project management issues and require a reliable and efficient design execution process.

Our Specialization services include:

- ***Wave Hydrodynamics***
- ***Analysis of Offshore Structures***
- ***Design of Offshore Structures***
- ***Dynamics of Offshore structures***
- ***Dynamics of Marine Vehicles***
- ***Reliability of Offshore Structures***
- ***Foundation of Offshore Structures***
- ***Numerical Modelling of Offshore Structures***
- ***Instrumentation of Offshore Structures***
- ***Installation of Offshore Structures***
- ***Subsea Pipelines and Risers***

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MANUFACTURING

Steel Towers

Concrete Towers

Space frame Towers

Anchor Cage

Among all countries, India is considered to be a major arena for wind power having enormous wind potential. In a wind turbine, the major parts are blades, foundation, nacelle and tower. Among these, Tower plays a significant deciding factor. Higher the tower, greater the power. Different tower typology is used based on different site specific conditions. Being pioneers in foundation design, we are expanding our expertise into Towers & Anchor cage starting from Design, Manufacturing, Logistics & Transportation, Commissioning for all types of towers ensuring a sustainable greener tomorrow.

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HARNESSING THE POWER OF SUN

With skilled manpower and experienced leadership, we are paving the way in providing clean energy solutions that are feasible, cost-effective and robust. At NeXHS, we are committed to deliver extensive engineering and technological solutions to solar power projects having an impressive portfolio and in-depth technical knowledge for catering all the requirements of major OEMs and IPPs across the Globe.

- ***Design & Proof Checking of Solar Foundation***
- ***Geotechnical assessment, Site Inspection and Field assistance***
- ***Validation & Feasibility studies***
- ***PMC and BOP services***
- ***Warehouse, Transformer yard, EHV Transmission lines and Storage systems***

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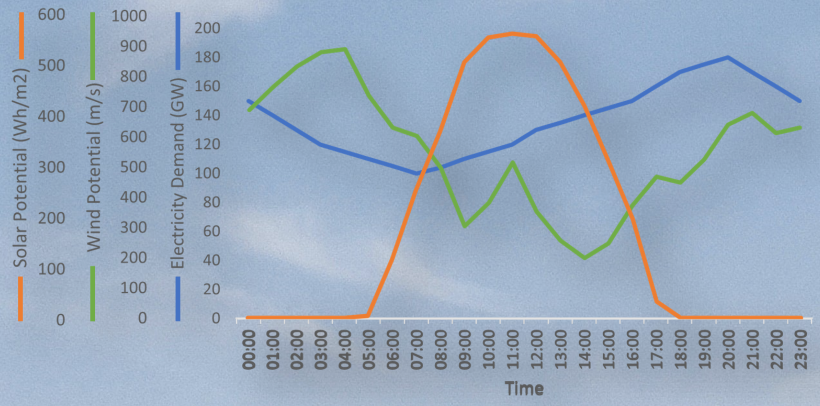
HYBRID ENERGY - THE CUSP OF WIND & SOLAR



Understanding the coalesce of Wind & Solar to cater the nation's energy demand

With a Goal of maximizing the power generation from Wind and Solar resources to meet the increasing energy demands of the nation with reduced Capex is actually challenging, but not for us. We provide sustainable solutions for implementing a wind-solar duo power concept that enhances the IPPs to utilise resources to the maximum thereby meeting the nations' rising electricity demand at optimum cost.

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SOLAR / SMALL WIND TURBINE FINANCING

We have devised Solutions to provide long term Solar / Wind financing in PPA mode for Residential, Commercial & Industrial customers, wherein we invest on the Solar / Wind equipment, installation & maintenance cost and the Customer has to pay only for the power that is produced through Solar / Wind. We will install, maintain and own the Solar / Wind system on your rooftop (or) property and you simply pay for the power generated through them by the month end, just like your utility bill at a very competitive rate. This will drastically help you avoid paying hefty bills to the Electricity Board and also creating an opportunity for the common people to help increase the nation’s energy sustainability.

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Other Extensive
TECHNICAL SERVICES

Owner's Engineer

- *Foundation & Soil Assessment*
- *Validation & Feasibility studies*

PMC & BOP Services

- *Site Inspection & Field Assistance*
- *Earthing System & Crane Pad Design*
- *Roads & Drainages*
- *EHV Transmission Lines*
- *Substation design*
- *Other Electrical & Civil Designs*

Why Choose Us?

Facilitate Project Financing through proper Engineering

Optimized Structures with Higher Reliability

R&D Programmes on Structural & Geotechnical Engineering

Designs are certified by **DNV, UL** and proof checked by CSIR-SERC & IITM

Foundation Typology and Designs are Site-specific

Retrofitting & Rehabilitation Assistance

HARNESSING EFFICIENTLY

CUSTOMIZATION

For every combination of location, soil and wind turbine loads, there exists an opportunity for customization. At NeXHS, we carefully evaluate these combinations and propose optimal design solutions which are in turn cost-effective to our customers.

LOCALIZATION

Nature has itself given us enough local resources to utilize and optimize the foundation, but we chose to continue using standard designs and go the traditional way, excavating these natural resources and filling them with more extensive concrete. A typical onshore foundation is about ~ 5% of the overall project cost and just by optimizing the designs and by utilizing most of the natural resources available at site, we could target to save 1% to 1.5% on the overall project. This savings could add up to one's profit or else be buried as concrete in the soil. Cascading to the offshore, it is about 16% of the overall cost.

At NeXHS, we believe in optimizing the foundation design by maximum utilization of local resources available at site in our designs.

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A GLOBALLY TRUSTED COMPANY

Being originated from India, we are marching forward with par excellence in handling world-wide projects matching with their site specific standards by achieving optimization without compromising the quality. In addition to that, we also extend our support in the 3rd Party Validation of Designs where we have collegiality with both Government Body like CSIR-SERC and International Certifying Bodies like UL, DN-VGL, Bureau Veritas, etc., So, *What's your Challenge…?*

SIEMENS Gamesa RENEWABLE ENERGY · VENWIND refex A refex Group Company · greenko · JSW · ADITYA BIRLA GROUP · Welspun WORLD

APRAVA ENERGY · windtechnic · NIWE · INOXWIND · Vestas · sembcorp

KSHEMA POWER AND INFRASTRUCTURE COMPANY PVT. LTD. · SUZLON POWERING A GREENER TOMORROW · LM WIND POWER a GE Renewable Energy business · JUNIPER Green Energy · adani Renewables · acciona

SANY · WEG · ENVISION · Everrenew · alfanar · CleanMax POWERING SUSTAINABILITY

NORDEX We've got the power. · ReNew POWER · KPI Green Energy Limited (Formerly known as K.P.I. Global Infrastructure Limited) · EDF renouvelables · SENVION wind energy solutions

FOURTH PARTNER ENERGY · GE · amp · AVAADA · VATEC · L&T · UL

VENA ENERGY · serentica · ArcelorMittal · POWER · SANGREEN FUTURE RENEWABLES · THE RAMCO CEMENTS LIMITED RAMCO

A PARADIGM SHIFT FOR A LOW-CARBON ENVIRONMENT

The continuous rise in CO_2 emissions over the past many years and growing global demand for stable electricity, heating, cooling, and logistics pose a major threat worldwide. The Globe at this point of time is quite alarmed at the influx of energy from other non-renewable sources which has a carbon footprint packaged with the electricity generation. To balance with an ecological and sustainable energy, demand is the need of the hour but it has its serious and potential challenges to be overcome before we put it into the system. The billion-dollar question here is, without affecting or undergoing any kind of economical stress how to shift the energy base from non-renewable to renewable sources thereby ensuring a stop to climate change. Definitely, it brings the whole globe to brainstorm how without distressing the existing system we make a paradigm shift to ensure affordable and clean energy for all.

With diversification it has always its potential challenges to be gone through as various nations face different kinds of energy challenges, which is why each country should have their own unique energy model to transition to a negligible carbon economy. Some economies need to strengthen their domestic grid infrastructure to secure a stable supply of electricity, whereas others need to take action to reduce the country's overall energy consumption. Some already base their energy consumption on energy generated by renewables, while others are well underway with the digitalisation of their energy system, rolling out sensors and smart meters, using data to create more intelligent and flexible energy systems. Transitioning to a low-carbon society marks a paradigm shift in the energy sphere.

CONTACT US

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