



**SIEMENS**  
*Ingenuity for life*

# SeaFloat Power Plants

## Solution with the SGT-8000H

The SCC-8000H SeaFloat plant utilizes the advanced and robust SGT-8000H gas turbine mainly designed for combined cycle applications with highest possible efficiency

### Short project duration

The high degree of modularized design and delivery based on pre-assembled plant modules minimizes the manpower required at yard as well as it is minimizing the installation and commissioning time prior to commencing commercial operation. Established high state of the art infrastructure and highly qualified labor at ship yards results in further acceleration.

### Typical fields of application

The SeaFloat SCC-8000H is a notable alternative to any land based base load power plant with more than 650 MW. It provides competitive CAPEX and OPEX at the numerous advantages of a SeaFloat power plant. One particular application is the replacement of outdated (coal fired) power plants: the outdated asset can be kept operating until the very moment when the

SeaFloat power plant is arriving at the site and hook up to the grid is started.

### Less project risks

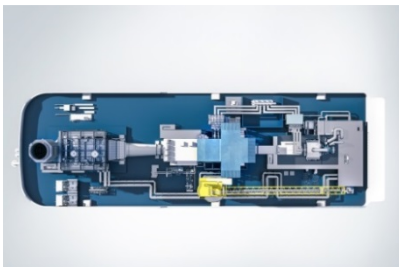
Typical soil risks are not applicable anymore. Additionally, typical project risk result from brown field activities such as demolition works, site leveling activities, relocation of existing structure can be mitigated with SeaFloat power plants. Unavailability of qualified labor does not apply anymore due to installation at yard.

### Consideration of marine conditions

While the SCC-8000H based SeaFloat power plant builds up respectively uses well proven equipment from Siemens' vast experience in land based combined cycle power plants, the marine conditions, mainly movements, accelerations and hull deflections have been addressed by multiple optimizations.

## Key benefits

- High efficiency (up to 41% SC, >61% CC)
- Fast start-up capability, high operational flexibility
- Low lifecycle costs
- High reliability and availability
- High serviceability
- Reduced emissions per kWh
- High efficiency and low emission also in part-load operation





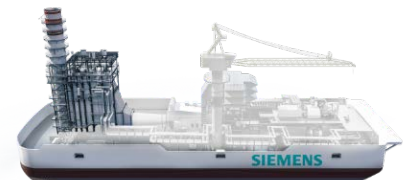
### SGT-8000H

The gas turbine - generator set is a 3-point mount single lift package to de-couple it from deflections of the barge. Special care has been taken to cope with movements and accelerations e.g. improved bearing capacity, anti-vibration mounts.



### SST-5000

Steam turbine and condenser are placed in a common single lift frame which is 3-point mounted with anti-vibration mounts. Condenser partition plates and flexible elements have been considered.



### HRSG

The HRSG is specially designed for maritime environment. Baffle plates avoid sloshing of water in the drums and flexible elements and joints allow to coping with hull deflections.

Simple cycle power generation	1xSS 50Hz	1xSS 60Hz
Power output	450 MW	310 MW
Gross efficiency	> 41 %	> 40 %

Combined cycle power generation	1x1 50Hz	2x1 50Hz	1x1 60Hz	2x1 60Hz
Net plant power output	665 MW	1,330 MW	460 MW	930 MW
Net plant efficiency	61%	61%	61%	61%
Number of gas turbines	1	2	1	2
Steam turbine model	SST-5000	SST-5000	SST-5000	SST-5000

#### Note:

Emissions, NO<sub>x</sub>, [ppmV] <25 @ 15% O<sub>2</sub> (50-100% GT load)

Emissions, CO, [ppmV] <10 @ 15% O<sub>2</sub> (50-100% GT load)

Installed performance at ISO conditions