

Our Material ESG Issues

Our approach

Climate Change

The table below sets out our management approach to climate change issues guided by TCFD recommendations.

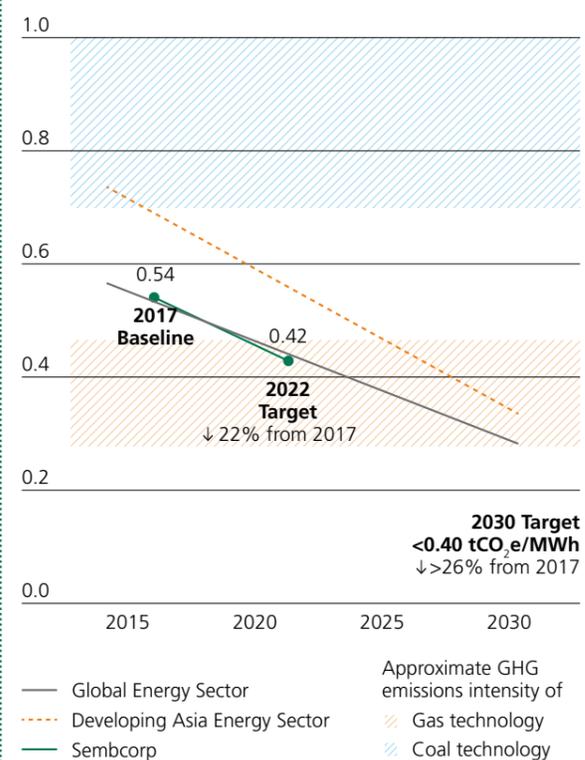
 For more information on our Climate Change Strategy, please visit the Reports & Policies page in the Sustainability section of our website.

TCFD Recommended Disclosures	
<p> Governance</p> <p>Climate-related issues are managed through our Climate Change Working Committee (CCWC), led by the head of our Renewables & Environment business. The CCWC reports to the Sustainability Steering Committee</p>	<p>(SSC), which reports to the board's Risk Committee on sustainability issues including climate change. The achievement of our climate change targets is monitored and incentivised via the performance scorecards of our Group President & CEO and other relevant senior executives.</p>
<p> Strategy</p> <p>In formulating Sembcorp's Climate Change Strategy, the Group identified climate-related risks and opportunities for our Utilities business by evaluating four key risk factors: physical environmental impacts on our assets, brand and reputational risks, requirements for regulatory compliance, and product and market risks.</p> <p>We evaluated these climate-related risks and opportunities using near-term (2017 to 2022) and medium-term (2030) lenses, and also considered long-term (2050) trends such as a science-based target for the utilities sector by 2050. When evaluating our markets from a climate-based scenario lens, we used International Energy Agency (IEA) scenarios such as the New Policies Scenario and the 450 Scenario.</p>	<p>The key risks related to climate change that Sembcorp's businesses face are changes in policy and regulation, technology and customer demand, and weather disruption and stakeholder expectation.</p> <p>The findings from our climate-related scenario analysis shaped our strategy towards a more balanced energy portfolio. We will restrict our investments in coal-fired power plants and improve the energy efficiency of our existing plants. We will focus on growing our gas and renewables portfolio as well as our green business lines while exploring new business models, products and services that focus on energy efficiency, digitalisation and new energy solutions.</p>
<p> Risk Management</p> <p>As part of the development of our Climate Change Strategy, climate-related risks and opportunities were identified as described above. The ongoing identification, assessment and management of climate-related risks is complex and multi-dimensional. Currently, our markets and business units perform a high level impact assessment and review the adequacy and effectiveness of controls in addressing climate-related risks as part of our Governance Assurance Framework (GAF). We are in the midst of</p>	<p>transitioning from the GAF to an Integrated Assurance Framework, which provides a more holistic and robust basis of assurance for the adequacy and effectiveness of our risk management and internal control system.</p> <p>The process identifies risk, including climate-related risks, from a top-down strategic perspective and a bottom-up perspective from each key market. We are committed to strengthening our organisational capabilities in addressing climate-related risks.</p>
<p> Metrics and Targets</p> <p>The key metrics and targets we have set are reductions in our GHG emissions intensity and growth of our renewables portfolio.</p> <p>We have set emissions intensity targets to be in line with the scale of reductions required to keep the increase in global average temperature to below 2°C above pre-industrial levels as per projections in the IEA World Energy Outlook 2016. Our target is to reduce our GHG emissions intensity¹ from 0.54 tonnes of carbon dioxide equivalent per megawatt hour (tCO₂e/MWh) in 2017 to 0.42 tCO₂e/MWh by 2022, and to less than 0.40 tCO₂e/MWh by 2030.</p>	<p>We plan to achieve these targets through two key thrusts. The first is to reduce negative impact by reducing emissions; the second is to move towards a balanced portfolio of low-carbon energy assets by growing our renewables capacity.</p> <p>Our wind and solar energy assets generate low-carbon energy for customers. In 2018, we grew our wind and solar power capacity in operation and under development by around 20% to 2,600 megawatts. This is equivalent to taking approximately 550,000 cars off the road for a year² or avoiding 2.5 million tonnes of carbon dioxide equivalent (CO₂e) emissions.</p>

¹ Refers to GHG emissions intensity of our Utilities business' assets that produce GHGs from the combustion of fossil fuels

² Based on an average car emitting 4.6 tonnes of carbon dioxide per year. Source: US Environmental Protection Agency, 2017

GHG Emissions Intensity (Current and Targeted) Compared with IEA's 2°C Scenario (tCO₂e/MWh)



Resource Management

Sembcorp provides solutions in energy, water and waste management that support a circular economy and help minimise the use of resources.

In addition, we are committed to innovation and undertake various initiatives to improve operational efficiency in our energy and water plants. We collaborate with institutions of higher learning, research institutes as well as private sector players to explore solutions. To further encourage innovation from the bottom up, Sembcorp's IDEA Awards Programme also recognises innovative ideas and efforts across the Group.

Energy management

Our power business generates electricity and steam. To ensure our assets generate energy efficiently, we invest in the latest technologies when developing new plants as well as retrofitting existing ones. We proactively pursue optimisation to improve our efficiency while reducing emissions. Energy efficiency parameters are embedded in our plant operation management systems and are monitored daily. A technical forum discussion is held monthly for our global energy

operations to facilitate best practice case studies and sharing of operational and efficiency issues.

Water and wastewater management

Our water business comprises industrial wastewater treatment, water reclamation and seawater desalination. Through these services, we are able to provide solutions to issues related to water scarcity as well as water pollution.

Sembcorp's comprehensive suite of water solutions is able to integrate water supply, wastewater treatment and water reclamation into a closed loop for our customers. This approach minimises liquid discharge and reduces environmental impact while conserving water resources. In treating industrial wastewater, we apply innovative technologies to treat multiple streams of industrial wastewater we receive from our customers. We leverage different wastewater influent profiles to optimise the wastewater treatment process. In doing so, we reduce both energy consumption and chemical use in our treatment process. In some of our plants, we further channel a proportion of treated water for reclamation, and the reclaimed water is supplied to our customers for their industrial processes. In Singapore, our NEWater plant produces reclaimed water that helps meet Singapore's potable water needs.

Our large-scale integrated power and desalination plants use multi-stage flash distillation and reverse osmosis to provide high-quality water to industries and households in water-scarce areas such as Oman and the UAE. Our desalination plant in the UAE uses waste steam from our power plant as part of its water production process.

Energy plants use large amounts of water for cooling purposes. A majority of our energy plants use seawater for cooling purposes, to minimise the use of freshwater and groundwater. In some of our power plants, we further employ closed loop cooling water systems to minimise water drawn from the ocean.

Waste management

We aim to apply a circular approach across our businesses. We operate energy-from-waste plants in Singapore and the UK, where energy is generated from waste. In our coal-fired power plants in India, fly ash is generated as a by-product of the combustion of coal. We channel the majority of this fly ash to vendors who recycle it into cement and bricks.

In our industrial wastewater treatment operations, we actively look to reduce the volume of sludge generated as a by-product of the treatment process. Where feasible, our sludge disposal vendors convert non-hazardous sludge into products such as bricks and plant fertiliser.