

Unitil

Asset Climate Vulnerability Assessment

Summary

At Unitil, climate-related risks and opportunities are reflected in our strategic planning processes. Operations, and operating excellence, are critical to and driven by the Company's mission and vision, which include deliberate consideration for sustainability, and climate change risk and opportunity. The Company's Mission "to safely and reliably deliver energy for life and provide our customers with affordable and sustainable energy solutions" recognizes the critical importance of our energy delivery services and also considers the lasting value sustainability creates for our stakeholders. The Company's Vision Statement, "to transform the way people meet their evolving energy needs to create a clean and sustainable future" is heavily influenced by climate related risks and opportunities.

Unitil's Strategic Planning Process includes an annual review of industry drivers, continuous improvement Mission objectives, and strategies to achieve our Vision. In 2022 Unitil's Strategic Planning Committee (SPC) engaged its Strategic Management Group (SMG) in a multi-day exercise to perform two separate climate scenario analyses: one that aggressively models high emissions and climate impacts to the region (RCP 8.5)¹ and one that forecasts drastically curbed emissions and a milder outcome (RCP 2.6)². Members were asked to review scenario specific supporting data and project operational, organizational, and financial impacts in each case. SMG members were divided into groups with balanced cross functional expertise and tasked with targeting specific focus areas with the purpose of making suggestions on both risk mitigation and the pursuit of opportunities. Results were compiled, ranked by intensity across a risk mitigation 'heat map,' and reviewed to establish common themes, priorities, and alignment to the Strategic Pillars contained within the Company's existing strategic planning documents.

The results of the climate-related scenario analysis were an understanding of which physical and transitional risks under which Representative Concentration Pathways (RCPs) are material to the company, and which of these risk areas have the highest risk prioritization. 7 physical risks and 4 transitional risks for two RCP scenarios (11 total cases) were identified for company specific assessment. This assessment included identifying the likelihood and impact to the company as well as the risks, mitigating actions, and opportunities associated with each. Of those 22 cases, 6 were identified as posing the highest likelihood and impact to the company. These were Technology; and Policy, Legal, and Regulatory under RCP 2.6 and Temperature Extremes; Hurricanes and Storms; Reputation; and Change in Mean Temperature under RCP 8.5. For each of these 6 cases, the identified risks, mitigating actions, and opportunities faced were reviewed for inclusion in current strategic planning initiatives. Each of these areas were reviewed for additional data and input need and are incorporated into an internal strategic planning project management plan to continue analysis and further inform strategic planning.

¹ RCP 8.5 refers to the concentration of carbon that delivers global warming at an average of 8.5 watts per square meter across the planet. The RCP 8.5 pathway delivers a temperature increase of about 4.3°C by 2100, relative to pre-industrial temperatures. RCP stands for Representative Concentration Pathways.

² RCP 2.6 (also referred to as RCP3-PD) is the lowest in terms of radiative forcing among the four representative concentration pathways. This particular scenario is developed by the IMAGE modeling team of the Netherlands Environmental Assessment Agency (Van Vuuren et al., 2007).

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OTHER REFERENCE MATERIAL BELOW:

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To achieve the Mission, The Company has described Mission Focus Areas within the Strategic Plan that encompass six key areas of our business: Customer Engagement, Safety & Reliability, Energy Supply, Regulation, Growth, and People. Climate related risks and opportunities are reflected in our Mission Milestones. pursuing installation of Utility grade solar facilities.

The Strategic Plan has a large focus on strategies to achieve the Vision and is organized into three Strategic Pillars: Transformative Customer Solutions; Advanced Energy Systems; and Clean Energy Pathways. In 2022 Unitil's Strategic Planning Committee (SPC) engaged its Strategic Management Group (SMG) in a multi-day exercise to perform two separate climate scenario analyses: one that aggressively models climate impacts to the region and one that forecasts a milder outcome. Members were asked to review scenario specific supporting data and project operational, organizational, and financial impacts in each case. SMG members were divided into groups with balanced cross functional expertise and tasked with targeting specific focus areas with the purpose of making suggestions on both risk mitigation and the pursuit of opportunities. Results were compiled, ranked by intensity across a risk mitigation 'heat map,' and reviewed to establish common themes, priorities, and alignment to the Strategic Pillars contained within the Company's existing strategic planning documents.

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At Unitil, climate-related risks and opportunities are reflected in our strategic planning processes. Operations, and operating excellence, are critical to and driven by the Company's mission and vision,

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which include deliberate consideration for sustainability, and climate change risk and opportunity. The Company's vision, to transform the way people meet their evolving energy needs to create a sustainable future, directly incorporates climate-related risk and opportunity.

The Company has outlined nine strategies to achieve that vision and have organized them into three strategic pillars.

Transformative Customer Solutions Pillar:

- The Energy Marketplace strategy will connect customer with value adding products and services that empower users to take control of their energy use.
- The Customer Clean Technologies strategy will accelerate customer adoption of low-carbon and non-carbon energy technologies, focusing first on the transportation and heating sectors which offer the greatest opportunities for lowering GHG emissions.
- The Clean Transportation strategy includes investment in public charging infrastructure and compressed natural gas (CNG) fuels designed to support zero emissions transportation solutions.

Advanced Energy Systems Pillar:

- The System Efficiency Strategy includes invests in technologies and information sharing platforms that optimize system performance and create savings for customers.
- The Reliability and Resiliency Strategy will seek to reduce the frequency and duration of power outages, mitigate storm impacts, and restore service faster.
- The Distributed Energy Resources Strategy will expand and optimize the use of DER on the system through real time forecasting, advanced generation and load management.

Clean Energy Pathways Pillar:

- The Corporate Sustainability Strategy will reduce direct company greenhouse gas emissions by 50 percent by 2030 and achieve net-zero emissions by 2050.
- The Renewable Electricity Strategy will seek out and invest in renewable energy projects where state regulations allow, furthering renewable penetration in the region.
- The Renewable Natural Gas Strategy will pursue renewable natural gas (RNG) projects to diversify a portion of our gas supply with carbon-neutral and carbon-negative alternatives, and to offer RNG options to customers.

In order to translate these RCPs to the company's business and formulate strategic responses, the following assumptions were made:

RCP 2.6 requires decarbonization, the ability to change and adapt, and requires investment in and rapid development of technology.

There were also analytical choices made around timing, the scope of application, and which risk areas were identified to assess.

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Timing – The company considered the implications of the risk areas in this scenario modeling assessment in the context of a 15-year timeframe.

Scope – The analysis was applied to the company's entire operations including considerations for customers and supply-chain.

Risk Areas – The risk areas included consideration for relevant physical risks with impact to the company's physical assets, and four transition risks spanning the largest non-physical areas of impact. In respect to the risk areas, the following physical climate assumptions for New England and the Company's service territory were made:

The New England annual mean temperature is increasing at a faster rate than the global annual mean temperature rise and has already increased by about 2.4 degrees Fahrenheit (1.3°C) since 1895. The annual mean temperature will continue to rise and the number of days with temperatures over 100 degrees Fahrenheit is also projected to increase in the future. The precipitation patterns and storm intensity and patterns will change. In the Northeast, the annual total precipitation has increased over the last few decades and will continue to rise. Changes also include an increase in intense multi-day events interspersed with periods of drought. These events could lead to flooding and with the rise in winter temperatures, damaging heavy wet snowfall. New England sea levels are rising. Increases are expected and will have impacts bringing damaging coastal storm surge and tidal flooding.

In order to translate these RCPs to the company's business and formulate strategic responses, the following assumptions were made:

RCP 8.5 assumes less rapid change, more business as normal, allows for slower adoption and piloting of technology, and requires more adaptation to changing physical and transitional risks.

There were also analytical choices made around timing, the scope of application, and which risk areas were identified to assess.

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