

## 2022 Regulated Hydroelectric Performance Scorecard

Performance Outcomes		Measures	2018	2019	2020	2021	2022		Historical	2023 Target
							Actual	Target	Trend	
Safety & Environment	Total Recordable Injury Frequency (per 200k hours)		1.68	1.32	1.21	1.02	1.56	1.21	●	1.20
	Environmental Performance Index (%) <sup>1</sup>		135%	150%	150%	105%	150%	100%	●	80%
Reliability	Availability Factor (%)		86.0%	86.6%	88.2%	88.4%	86.9%	85.8%	●	86.6%
	Equivalent Forced Outage Rates (%)		4.2%	6.4%	5.6%	2.2%	4.3%	2.7%	●	2.6%
Cost Effectiveness	OM&A Unit Energy Cost (\$/MWh)		8.7	8.5	8.5	10	9.6	9.2	●	9.3
	Regulated Facilities Total Generating Cost per Net MWh (\$/MWh) <sup>2</sup>		23.4	24.1	25.3	27.6	28.7	N/A	-	N/A

### Notes:

1: In order to align Environmental Performance Index ("EPI") calculations with other index calculations across the hydroelectric and nuclear fleet, the EPI calculation will be scored out of a maximum of 100% beginning in 2023.

2: Per OEB requirements, no target is filed for TGC.

### Legend: 5-year Trend

+ Favourable  
- Unfavourable  
N Neutral

### Current Year

● Target met ● Target not met

## 2022 OPG Scorecard Management Discussion & Analysis

### "2022 Scorecard MD&A"

#### Regulated Hydroelectric Facilities Performance Measures

OPG's regulated hydroelectric fleet consists of 54 stations with a combined installed capacity of 6,555 MW. The objectives of OPG's hydroelectric operations include operating and maintaining the generating facilities in a safe, reliable, efficient and cost-effective manner, while increasing the output from, and pursuing opportunities to increase, the fleet's generating capacity. OPG aims to increase the hydroelectric facilities' output by improving operational flexibility, enhancing reliability, and, subject to water conditions, increasing availability to meet electricity system demand.

Given the long-term nature of OPG's hydroelectric fleet, OPG maintains and improves the performance of existing hydroelectric generating stations through multi-year capital and non-capital investments including replacements and upgrades of turbine runners, and refurbishment or replacement of existing generators, transformers and control systems. OPG pursues opportunities to refurbish, expand or redevelop its existing hydroelectric stations. The cornerstone of OPG's project prioritization and maintenance approaches for the hydroelectric assets is that safety, environmental, other regulatory programs and alignment with strategic goals, such as OPG's Climate Action Plan, are of the highest priority.

During 2022, the Environmental Performance Index ("EPI") and Availability Factor performance measures were better than target while Total Recordable Injury Frequency ("TRIF"), Equivalent Forced Outage Rates ("EFOR"), OM&A Unit Energy Cost ("UEC") performance measures were below target. Total Generating Cost per Net MWh ("TGC") for the regulated hydroelectric facilities increased in 2022, as compared to 2021, due to investment in asset rehabilitation. Performance measures and 2022 performance results are further detailed below.

#### Hydroelectric Safety & Environment

- **Total Recordable Injury Frequency (per 200k hours)**

TRIF is defined as the average number of lost time injuries, medically treated injuries and restricted work injuries per 200,000 hours worked. A low TRIF numerical value is good.

The 2022 TRIF performance (1.56) was lower than the 2021 TRIF performance (1.02) and the 2022 TRIF target (1.21). This was attributed to a challenging first quarter of 2022 where half of the recordable events occurred. In order to strengthen performance an Observation and Coaching (O&C) program was implemented in the second quarter of 2022 that contributed to the decrease in events over the final three quarters of 2022. The benefit of this program is that supervisors and workers focus on identifying how controls and barriers can be strengthened when performing work so that when an event occurs, there is a reduced likelihood of injury.

In 2023, Renewable Generation will continue to implement its "Fail Safe" strategy to build stronger safety defenses, which includes continuously strengthening: safe work planning; learning from events; employee engagement; field observations and coaching; and education and communication.

- **Environmental Performance Index (%)**

EPI is a weighted distribution of multiple measures, including the number of environmental spills and environmental regulatory infractions.

In 2022, the regulated hydroelectric facilities' EPI performance (150%) exceeded the 2022 target (100%). This performance is due to robust programs to prevent category A or B spills, to satisfy Environmental Compliance Assessment inspections, track and remove PCB containing equipment and maintain an ISO14001-certified Environmental Management System.

#### Hydroelectric Reliability

- **Availability Factor (%)**

The Availability Factor ("Availability") is a measure of the reliability of a generating unit, represented by the percentage of time the unit is capable of providing generation considering planned maintenance outages, unplanned outages, and unit derates. The metric is reported on a Maximum Capacity Rating weighted average basis.

Availability decreased from 88.4% in 2021 to 86.9% in 2022 which was higher than the target performance (85.8%). The 2022 Availability performance was impacted by higher unplanned outages in the Niagara and southeastern regions, partially offset by a reduction of planned outage hours.

- **Equivalent Forced Outage Rates (%)**

EFOR is an index of generating unit reliability measured by the ratio of time a generating unit is forced out-of-service, including equivalent forced deratings to the time the unit was operating or was forced out-of-service completely or partially. EFOR represents the percentage of time a unit is forced unavailable, as a function of intended service. Planned maintenance time and outages due to external causes are excluded from the denominator in the calculation of EFOR.

EFOR increased from 2.2% in 2021 to 4.3% in 2022, which was higher than the target performance (2.7%). The 2022 EFOR performance was primarily due to higher unplanned outages in the Niagara and southeastern regions.

## Hydroelectric Cost Effectiveness

- **OM&A Unit Energy Cost (\$/MWh)**

UEC is a measure of financial productivity. It measures the Operations, Maintenance and Administrative (OM&A) costs per unit of energy produced (in MWh). UEC is calculated as the total OM&A expenditures, divided by annual generation.

The 2022 UEC (\$9.6/MWh) exceeded the 2022 performance target (\$9.2/MWh). This was primarily due to lower than target production (1.5 TWh) resulting from AGC losses and constraints at Sir Adam Beck (Niagara); these constraints were a result of Hydro One transmission outages and IESO market-related curtailment. UEC improved in 2022 over 2021 mainly due to increased generation of 2.1 TWh in 2022, this was due to lower than normal water conditions particularly in Eastern and Northwestern Ontario experienced during 2021.

- **Regulated Facilities Total Generating Cost per Net MWh (\$/MWh)**

TGC is defined as the total cost of operating the regulated hydroelectric facilities, which includes OM&A, fuel (water), and sustaining capital, divided by generation. TGC is measured as a 3-year historical average to account for year-over-year fluctuations in capital expenditures.

The TGC increased by 3.9% from \$27.6/MWh in 2021 to \$28.7/MWh in 2022. The increase is primarily due to capital investments in overhaul programs to address asset end of life.

## Note to Readers of 2022 Scorecard MD&A

This Scorecard MD&A contains forward-looking statements that reflect OPG's current views regarding certain future events and circumstances. Any statement contained in this document that is not current or historical is a forward-looking statement. OPG generally uses words such as "anticipate", "believe", "budget", "foresee", "forecast", "estimate", "expect", "schedule", "intend", "plan", "project", "seek", "target", "goal", "strategy", "may", "will", "should", "could" and other similar words and expressions to indicate forward-looking statements. The absence of any such word or expression does not indicate that a statement is not forward-looking.

All forward-looking statements involve inherent assumptions, risks and uncertainties. All forward-looking statements could be inaccurate to a material degree. Some of the factors that could cause such inaccuracies include, but are not limited to, legislative or regulatory developments, financial market conditions, general economic conditions and the weather. In particular, forward-looking statements may contain assumptions such as those relating to OPG's generating station (GS) performance, availability and operating lives, fuel costs, surplus baseload generation (SBG), fixed asset removal and nuclear waste management and associated funding requirements, refurbishment of existing facilities, development and construction of new facilities, defined benefit pension and other post-employment benefit (OPEB) obligations and funds, income taxes, proposed new legislation, the ongoing evolution of electricity industries and markets, the continued application and renewal of energy supply agreements (ESAs), foreign currency exchange rates, commodity prices, wholesale electricity market prices, environmental and other regulatory requirements, health, safety and environmental developments, the COVID-19 pandemic, changes in the Company's workforce, renewal of union collective agreements, business continuity events, the weather, climate change, technological change, financing requirements and liquidity, funding sources, applications to the Ontario Energy Board (OEB) for regulated prices, the impact of regulatory decisions by the OEB, forecasts of earnings, cash flow, earnings before interest, income taxes, depreciation and amortization, gross margin, Return on Equity Excluding Accumulated Other Comprehensive Income (ROE Excluding AOCI), Total Generating Cost (TGC) per megawatt-hour (MWh), operations, maintenance and administration (OM&A) expenses and project and other expenditures, retention of critical talent, and supplier and third party performance. Accordingly, undue reliance should not be placed on any forward-looking statement. The forward-looking statements included in this Scorecard MD&A are made only as of the date of this Scorecard MD&A. Except as required by applicable securities laws, OPG does not undertake to publicly update these forward-looking statements to reflect new information, future events or otherwise.