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Environmental Commissioner of Ontario
Commissaire à l'environnement de l'Ontario

Dianne Saxe, J.D., Ph.D. in Law
Commissioner

Dianne Saxe, J.D., Ph.D. en droit
Commissaire

May 8, 2018

To the Head of Council:

Re: Environment, Energy and Climate Resources for Municipalities

As you know better than most, much of the work that affects Ontario's energy, environment and climate is performed by municipal governments, and provincial action/inaction on these topics have huge impacts on municipal governments, assets and budgets.

I have the privilege of serving as Environmental Commissioner of Ontario (ECO), an independent officer of the Ontario Legislature. Under Ontario's Environmental Bill of Rights, my staff and I provide the Legislature with independent, non-partisan research and advice on energy, environment and climate issues in Ontario. In the course of this work, we examine many issues that are directly relevant to municipal governments.

Last year, for example, we reported, among other topics, on energy use and opportunities in Ontario's municipal water and wastewater systems,[1] and on waste, recycling and the circular economy,[2] as well as opportunities to use recycled aggregate in municipal construction.[3] In 2018, we have reported on Ontario's climate and electricity policies, in reports entitled "Ontario's Climate Act: From Plan to Progress" and "Making Connections: Straight Talk about Electricity in Ontario" respectively.

Ontario's Climate Act: From Plan to Progress outlines Ontario's greenhouse gas (GHG) emissions in 2015, identifies challenges to further reducing GHGs, and reviews programs developed to implement the Climate Change Mitigation and Low-carbon Economy Act, and the Climate Change Action Plan. Central to the government's plans is Ontario's cap and trade program. The report comments on the first year of cap and trade, and how the resulting funds are being spent. Our evaluation of how the province tracks its own GHG emissions provides useful guidance for GHG tracking in your own organization, and we also look at climate-smart public procurement.

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[1] Every Drop Counts: Reducing the Energy and Climate Footprint of Ontario's Water Use
[2] Beyond the Blue Box: Ontario's Fresh Start on Waste Diversion and the Circular Economy
[3] Good Choices, Bad Choices

ATTACHMENT ITEMS ARE FILED ON SHELF

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Making Connections: Straight Talk about Electricity in Ontario describes the province's electricity system and identifies some of the key issues facing decision makers. The report has information about how sources and demand for electricity have changed, and why Ontario exports it. It explains electricity pricing and the increases Ontario has experienced over the last 13 years, as well as the benefits of conservation and clean energy sources to the environment and human health. The report has a particular focus on the future in its discussion of the Long-Term Energy Plan and how critical it is to meeting Ontario's climate change commitments in 2030 and beyond.

All of our reports are available at our website at eco.on.ca, together with explanatory webinars. For ease of reference, we are also providing you with one hard copy of our two most recent reports for your library, together with summaries for use by members of Council and staff. I hope they will be useful to you in policy discussions, planning and implementation.

Please share these reports with your colleagues. For more information about any of the topics covered in these reports, for additional hard copies of the reports or summaries in either official language, or to request a meeting or briefing, please contact us at commissioner@eco.on.ca or 1-800-701-6454.

Thank you for all your hard work on behalf of your community.

Sincerely,

D Saxe

Dianne Saxe
Environmental Commissioner of Ontario

* hard copies in municipal office

ONTARIO'S CLIMATE ACT
Plan to Progess Summary
docs.assets.eco.on.ca/reports/climate-change/2017/From-Plan-to-Progress-Summary.pdf

Plan to Progress REPORT - docs.assets.eco.on.ca/reports/climate-change/2017/From-Plan-to-Progress.pdf

MAKING CONNECTIONS
STRAIGHT TALK ABOUT ELECTRICITY Summary
doc.assets.eco.on.ca/reports/energy/2018/making-Connections-Summary.pdf

STRAIGHT TALK ABOUT ECRICITY REPORT
docs.asset.eco.on.ca/reports/energy/2018/making-connections.pdf

Ontario's Climate Act
From Plan to Progress

Annual Greenhouse Gas Progress Report 2017

SUMMARY

Download the full report at:
eco.on.ca/reports/2017-from-plan-to-progress

Environmental Commissioner of Ontario

It's complicated, but Ontario is on the right track

This is my second report to the Ontario Legislature about greenhouse gases (GHGs) and climate change.

In 2018, it is much too late to just *talk* about the climate; what counts now is action. Ontario took an essential first step when it closed its coal-fired power plants – still Canada's largest GHG reduction, and a help to air quality.

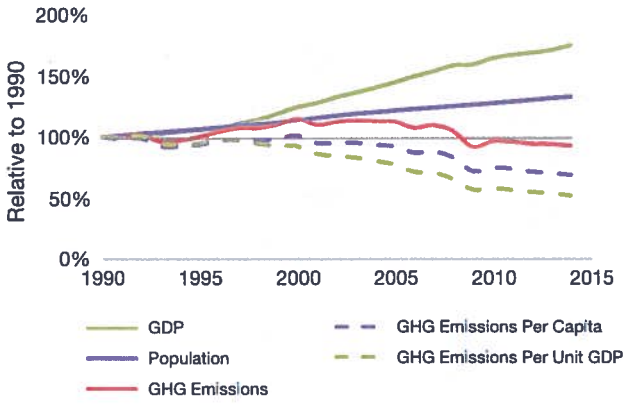
This report examines Ontario's progress on the second major step, putting a price on GHGs emitted into the atmosphere, for the benefit of our environment, our economy and our health.

Dianne Saxe, Environmental Commissioner of Ontario

Chapter 1: Ontario's GHG Emissions are Down

According to the latest available data, Ontario's GHG emissions dropped to the lowest level since reporting began in 1990, while gross domestic product and population continued to grow.

Mild weather, energy conservation/efficiencies, and coal-free electricity all helped reduce our emissions, but transportation emissions (especially from trucking – see Chapter 6) keep increasing.



Ontario's GHG emissions relative to GDP and population.

Source: Statistics Canada, *Gross domestic product, expenditure-based, provincial and territorial* (2016), CANSIM Table 384-0038; Statistics Canada, *Population by year, by province and territory* (2016), CANSIM Table 051-0001.

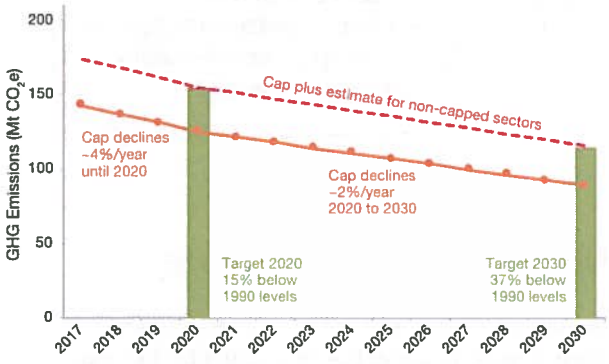
What has happened since the release of the *Climate Change Action Plan*?

A lot, actually

Chapter 2: Policies and Programs Since the Action Plan

This has been a busy time for Ontario climate policy. Since the government released its *Climate Change Action Plan* in June 2016, it has introduced dozens of additional policies and programs to reduce emissions from buildings, waste, transportation, land use, etc.

The central pillar was to put a cap and a price on Ontario's GHG emissions through a new carbon market (cap and trade program) that began January 1, 2017. Because long-term predictability of carbon policy is so important, Ontario has announced its cap on future GHG emissions for every year until 2030.



Ontario's emissions-reduction targets, cap on allowances for capped emitters, and estimate for non-capped sectors.

Source: Environmental Commissioner of Ontario.

The first year's distribution of carbon allowances (permits to emit GHGs) went smoothly, and the first four quarterly allowance auctions raised $1.9 billion for the Greenhouse Gas Reduction Account (see Chapter 5).

Ontario is not alone

Cap and trade is getting better and more popular around the world. The link with California and Quebec should help Ontarians

Chapter 3: National and International Context for Ontario's Climate Policy

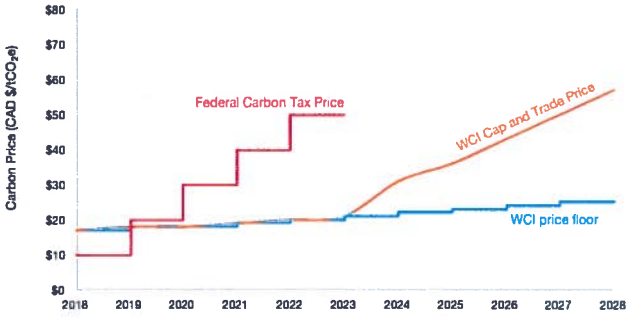
Ontario has joined other jurisdictions around the world that are producing economic, health and environmental gains by putting a price on carbon pollution.

Carbon pricing initiatives around the world. China also now has a national cap and trade program.

Source: International Emissions Trading Association Global Carbon Pricing Map (December 2017).

Most jurisdictions have chosen cap and trade instead of a carbon tax, although both options can work. Cap and trade can be hard for many people to trust because it is hard to understand. But research from Harvard and elsewhere shows that cap and trade can reduce emissions more reliably and at less cost than a carbon tax.

In Canada, the *Pan-Canadian Framework on Clean Growth and Climate Change* requires all provinces and territories to put a price on carbon. Ontario can use its cap and trade program instead of the higher-cost federal carbon tax.



Carbon price forecasts under carbon tax and cap and trade policies.

Source: Environmental Commissioner of Ontario with cap and trade price estimate from ICF, Long-Term Carbon Price Forecast Report (July 2017).

Ontario's carbon market is now linked with California and Quebec, its Western Climate Initiative (WCI) partners. This should keep the cost of gasoline and diesel lower for Ontarians; stabilize Ontario's carbon market; and help Ontario industries invest in emissions reductions here at home. However, the United States' decision to pull out of the Paris Agreement complicates Ontario's plans to count emissions reductions in California as our own, and political uncertainty could weaken the next two WCI auctions.

GHG emissions have dropped faster than expected in all three WCI partner jurisdictions. This good news means that:

- The WCI market needs fine-tuning to reduce the oversupply of allowances;
- Carbon allowance prices are likely to stay low until well after 2020; and
- The predicted (temporary) flow of money from Ontario to California may shrink.

What is an offset credit?

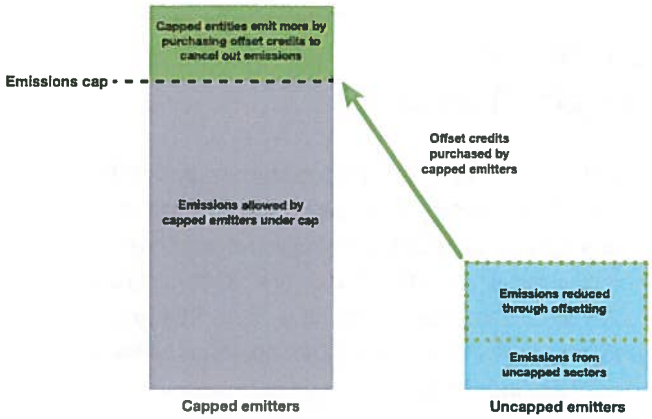
A reduction in GHG emissions outside the cap, to make up for extra emissions by capped emitters

Chapter 4: Carbon Offsets

Offset credits offer a second key tool to reduce emissions while keeping the cost down for Ontarians.

About 18% of Ontario's GHG emissions (such as methane and nitrous oxide from waste, agriculture and forestry) are not covered by the cap and trade program. Offset credits could allow capped emitters to pay these uncapped sectors to reduce their emissions, or to take CO_2 out of the atmosphere, flowing money to rural communities.

How Offsets Work in the Cap and Trade Market



Source: Environmental Commissioner of Ontario.

Offset credits could keep the cost of emissions reductions down for capped emitters. This is particularly important for petroleum product suppliers, who pay most of the cost of cap and trade, and who will pass it on to drivers.

But if offsets are not done right, they can be little more than greenwashing. Some of Ontario's proposed protocols should be rejected.

The ECO's rating of Ontario's proposed offset protocols.

Proposed Offset Protocol	Rating and Recommendation Move Forward Proceed With Caution Do Not Move Forward ? Not Enough Known
Landfill gas capture and destruction	
Mine methane capture and destruction	
Ozone depleting substances capture and destruction	
Refrigeration systems	
Conservation cropping	
Nitrous oxide reductions from fertilizer management in agriculture	
Emissions reductions from livestock	?
Grassland projects	
Anaerobic digestion	
Organic waste management	
Forest management	
Afforestation and reforestation	
Urban forest projects	

How well is the government using the money from cap and trade?

Good start, but should do better

Chapter 5: Greenhouse Gas Reduction Account

How well is the provincial government using the $1.9 billion dollars that flowed into the Greenhouse Gas Reduction Account (GGRA) from the first four cap and trade auctions?

According to the *Climate Change Mitigation and Low-carbon Economy Act, 2016* (*Climate Act*), GGRA funds must be used to reduce, or support the reduction of, GHG emissions. The ECO examined all uses of GGRA funds announced as of November 2017. Ninety-nine precent of these funds went to initiatives that met the minimum requirements of the *Climate Act*.

Government use of the GGRA is improving. By next year, the ECO wants to see a coherent plan tying GGRA funding decisions to the emissions-reduction targets in the *Climate Act* and to the reduction responsibilities of each ministry. For now, the GGRA's most important benefit is the improvement it has triggered in understanding Ontario's opportunities to reduce emissions.

How can we reduce freight emissions?

Avoid trucking where possible, improve truck efficiencies, and shift away from fossil fuels

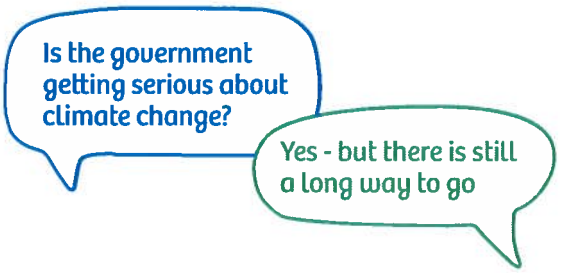
Chapter 6: Freight Trucks

Freight is essential to Ontario's economy, and reducing freight's GHG emissions is essential to our climate targets. GHGs from Ontario's freight sector have more than doubled since 1990. These are predominantly from trucks, whose improvements have done little to offset huge increases in the weight and distances of freight trucked around Ontario.

The growth of heavy truck GHG emissions has been driven by increased demand.

Source: Natural Resources Canada, Comprehensive Energy Use Database (2016), Transportation Sector, Ontario, Table 36: Medium and Heavy Truck Secondary Energy Use and GHG Emissions by Energy Source.

Some Ontario government policies, such as subsidies for natural gas trucking, are not likely to reduce emissions. Instead, the government should encourage the freight sector to *avoid* trucking where possible (e.g., through logistics and road pricing), *improve* diesel truck efficiency (e.g., through incenting the scrapping of older diesel trucks), and *shift* freight away from fossil fuels (e.g., providing more targeted support for zero-emission trucks).



Chapter 7: Is the Ontario Government Taking Climate Change Seriously?

Some Ontario government ministries are taking climate change seriously. Progress this year included consideration of climate change in the *Long-Term Infrastructure Plan*, improvements to the Building Code, and empowering municipalities to adopt climate change by-laws.

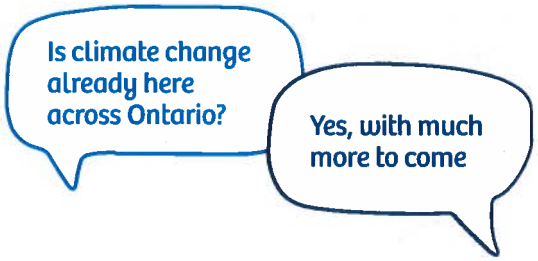
But ministries often fail to treat climate change as the crisis that it is. For example, the government has a blind spot for many of its own emissions, funds projects that worsen urban sprawl, and adopted a *Long-Term Energy Plan* that will not take Ontario to its climate targets. And Ontario's fiscal policy continues to undermine its climate policy, e.g., through fossil fuel subsidies.

Chapter 8: Low-Carbon Procurement

Government procurement is an important tool to build Ontario's low-carbon economy. The Ontario government buys, on average, more than $10 billion dollars of goods, services and infrastructure every year, and is a critical early market for low-carbon innovations.

The Ontario government has made some efforts to green what it buys and builds, but does not yet:

1. insist on knowing the GHG footprint of what it buys;
2. give that GHG footprint significant weight in procurement decisions;
3. set an emissions-reduction target for what it buys; or
4. report on its progress.



Chapter 9: Climate Change Impacts in Ontario

Climate change isn't just about polar bears, or about other people in other places in the future. Ontario is already feeling the effects of climate change, and much more is ahead.

Higher average temperatures and more extreme events, such as drought, storms, flooding and fires, are affecting people and organizations across the province. Tourism, forestry, agriculture and infrastructure are among the sectors affected by warmer, wilder and more unpredictable weather. Flooding continues to devastate families and communities in many parts of Ontario. Windsor had two "floods of the century" within 12 months.

Flooding in Harriston, Ontario.

Photo credit: Emergency Management Ontario.

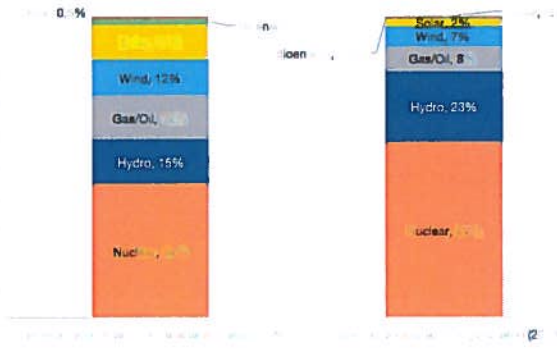
Public health is at risk from the spread of ticks, wildfire smoke and hotter weather, which also intensifies the impacts of air pollution. Ontario air quality is degraded even by distant events, such as fires in western Canada and the United States.

Young people won't have what we had.

Chapter 10: Talking With Ontarians About Climate Change

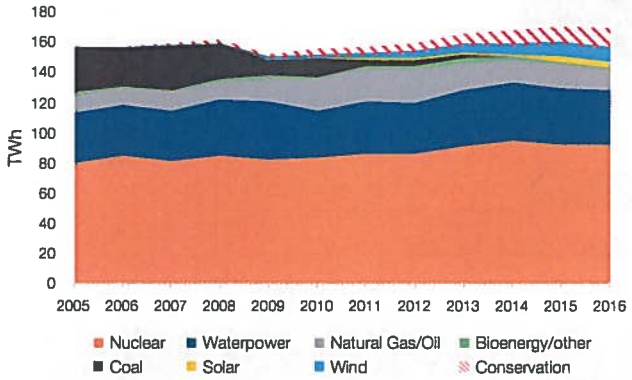
The Environmental Commissioner and her staff spend a lot of time talking with Ontarians about the urgency of climate change, what each of us can do about it, and what we owe to the young people we care about.

Climate change mitigation and adaptation cannot be left entirely up to government. No one can do everything, but everyone can do something. Ontarians must reduce their carbon footprint, get ready to adapt and speak up. It's not too late to make a difference.


Wind, 12%
Hydro, 15%
Solar, 2%
Wind, 7%
Hydro, 23%

Electricity conservation remains the cheapest way to match supply and demand, but Ontario needs to focus more on conserving electricity when demand is high (e.g., hot summer weekdays and cold winter evenings). (Q19)

Electricity production and conservation by resource, 2005-2016.



Is there a surplus?

Why does Ontario sell cheap power to the U.S.? Because it turns spare capacity into money.

When demand is low, Ontario often has surplus power. This off-peak surplus is a natural consequence of an electricity system based on nuclear and renewables, because supply is not determined by demand. The surplus may largely disappear after 2020. (Q7)

Ontario exports surplus power for more than it costs us to generate that power; Ontario does not lose money by exporting. But there are better options for using this power in Ontario, such as storage, charging electric vehicles and making hydrogen ("power to gas"). Flexible pricing would encourage demand to shift to when there is surplus power. (Q16)

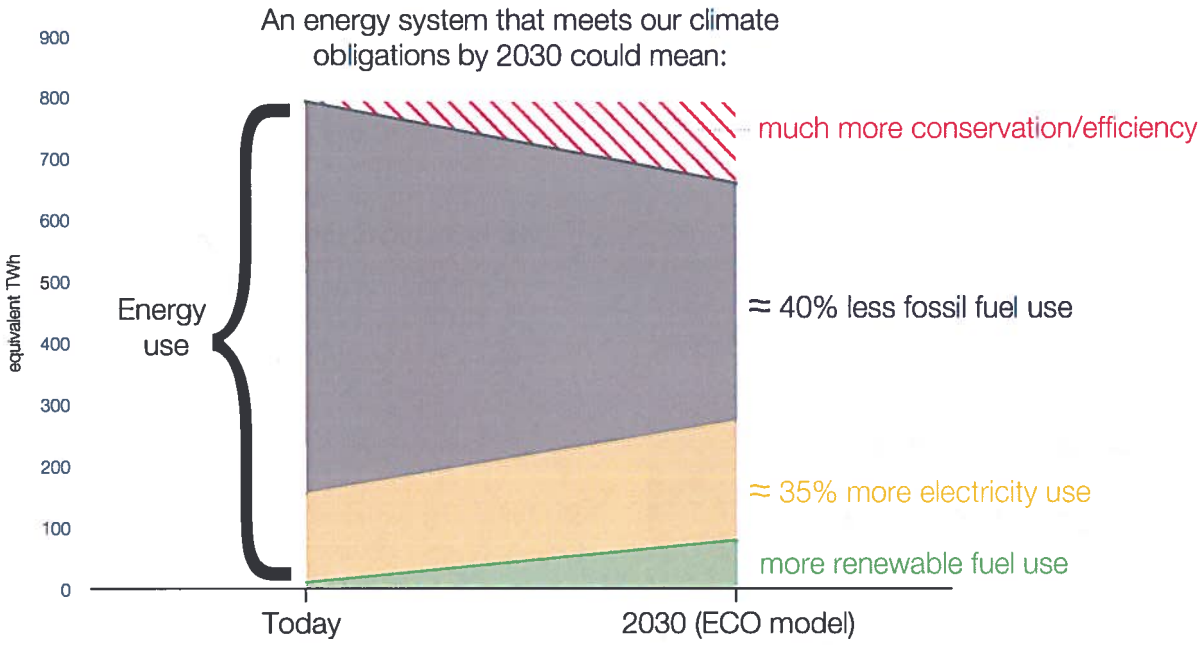
What's ahead?

We need more clean electricity and conservation to replace natural gas, gasoline and diesel. But Ontario is not getting ready.

The limits on greenhouse gas pollution in Ontario's Climate Change Mitigation and Low-carbon Economy Act mean that more than 40% of the fossil fuels now used for heating and transportation must be replaced by conservation, active transportation, biofuels, direct renewable energy and low-carbon electricity over the next 13 years, within the lifetime of today's vehicles and furnaces. This means that low-carbon electricity supply must increase much more than the government plans. (Q15)

The Ontario government is not prepared for this transformation. The 2017 Long-Term Energy Plan mostly ignores the urgency of climate change and the 80% of Ontario's energy that comes from fossil fuels. (Q13)

Ontario's current plans for obtaining future electricity supplies (other than nuclear) may save money in the short run if electricity demand remains flat. But they will discourage the growth of renewable electricity, may not save money if demand grows, and may not produce the low-pollution, low-carbon electricity supply that Ontario will need. (Q15, Q17, Q18)



Summary of ECO recommendations

The ECO recommends that:

1. Ontario's Long-Term Energy Plan should be required by law to be consistent with the Climate Change Mitigation and Low-carbon Economy Act. It should plan Ontario's energy system, not just electricity, and should prepare for significant electrification of transportation and heating.

2. Conservation should play a larger role than it does now and should be focussed on times of high demand. It will have more value as demand grows.

3. Ontario should do more to minimize adverse impacts of electricity generation, such as bird and bat kills by wind turbines.

4. To help people who are unduly affected by electricity rates, low-income and Aboriginal financial support programs should be supplemented with enhanced conservation programs to make electrically heated homes more efficient.

5. Ontario should learn from jurisdictions who already use much more renewable electricity, and update electricity infrastructure and energy system regulations to encourage the low-carbon transformation. For example:

   a. Ontario should get better at using flexibility tools, such as storage, demand response, interties and prices, to match supply and demand, instead of turning off (curtailing) low-carbon off-peak electricity and running gas-fired generation at peak.

   b. Net metering and Market Renewal should provide sufficient incentives to grow renewable electricity as needed to keep Ontario's electricity supply low-carbon.

   c. Local distribution utilities should facilitate a growing level of renewable generation and storage.