

# FACES OF TRANSFORMATION:

Jobs, economic renewal and cleaner air from Year One of Ontario's Green Energy Act

NOVEMBER 2010



environmental  
defence  
INSPIRING CHANGE



## Acknowledgments

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# INTRODUCTION

Ontarians know change. Today's 25-year-olds weren't born in homes with computers. Today's 35-year-olds didn't go to university or college with cell phones. All the same, today's 65-year-olds can find their grandkids' school with the GPS in their BlackBerry — and don't even bat an eye.

But change isn't just happening online or on our phones. It's happening in our factories, farms and First Nations communities. It's moving Ontario from importing dirty coal to making clean energy. And it's being embraced by Ontarians from all walks of life, who believe we can harness opportunity through renewable energy.

Only a year old, the *Green Energy & Green Economy Act* has tapped into Ontarians' long history of energy resourcefulness. In a province whose prosperity was first powered by Niagara Falls, and its great lakes and rivers, today's resourcefulness is powered by our wind, our sun and geothermal energy hidden deep beneath our soil.

This report tells the story of today's transformation. It tells the story of a province eager for this century's technology, and the faces of the tens of thousands of Ontarians on the front lines of economic and environmental renewal.

This report also tells how Ontario, in just one year, is catching up to renewable energy leaders in Europe. And how its benefits are shared.

The story isn't only told by the cleaner air that renewable energy produces, or the lessened impacts of climate change we will leave behind. But in the faces of the workers, farmers, First Nations and communities made stronger by Ontario joining the world in using cleaner energy. Today.

# ONE YEAR, MANY ACCOMPLISHMENTS: ONTARIO'S GREEN ENERGY & GREEN ECONOMY ACT

Ontario's "green energy program is widely recognized now as the single best...on the North American continent."

- Al Gore

Around the world, economies are embracing clean, 21st Century energy. For the second straight year, 2009 saw more renewable energy than polluting energy installed. So it's fitting that it was also the year Ontario joined the global march towards sustainability — and economic transformation. Only a year later, the benefits are clear:

- **Greater uptake than European leaders — France and Spain — in the first year.**
- **More than 22,000 applications across the province.**
- **Most community-owned renewable energy in North America.**

In only one year, Ontario is at the forefront of creating clean energy jobs, rejuvenating rural and First Nation economies, and cleaning our air. Just as the Auto Pact fuelled Ontario's economy in the 20th Century, new clean energy manufacturing can drive our economy in the 21st — making Ontario a leader in the worldwide trend towards powering prosperity with sustainability.

## Comparisons with Europe: a first year success story

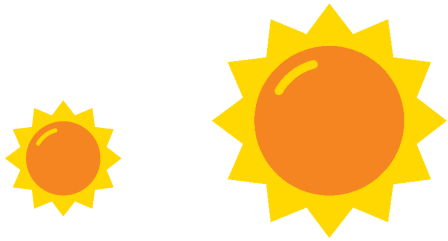
Ontario is attracting job-creating investment and closing polluting energy plants, thanks to its advanced feed-in tariff program. This program, pioneered in Europe, is a proven lever for investment dollars. In Germany alone, more than a quarter million people work in producing renewable energy.

Ontario is by far the largest jurisdiction in North America to embrace this solution — Oregon and Vermont are the others<sup>1</sup> — meaning we have to look to Europe for comparisons. There, the three leading clean energy economies are France, Germany and Spain, which have actively cultivated clean energy jobs and development for up to 20 years. Still, Ontario compares favourably to these clean energy leaders.

Adjusted for population, Ontario awarded contracts for more than three times the solar power installations in the first year of its feed-in tariff than Spain built in 2007, the first year of its advanced feed-in tariff program. (chart on next page)

<sup>1</sup> California, Maine and Wisconsin also have versions of feed-in tariffs, but their programs are much less comprehensive and not directly comparable.

### ONTARIO VS SPAIN, SOLAR

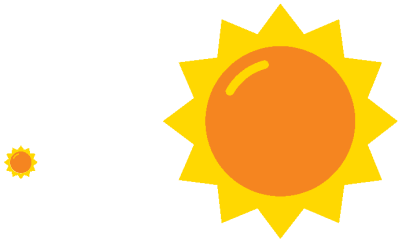


SPAIN (2007)  
157MW

ONTARIO (2010)  
732MW

Also adjusted for population, Ontario awarded more wind and solar power contracts than France built in 2001, the first year of its program.

### ONTARIO VS FRANCE, SOLAR



FRANCE (2001)  
1MW

ONTARIO (2010)  
732MW

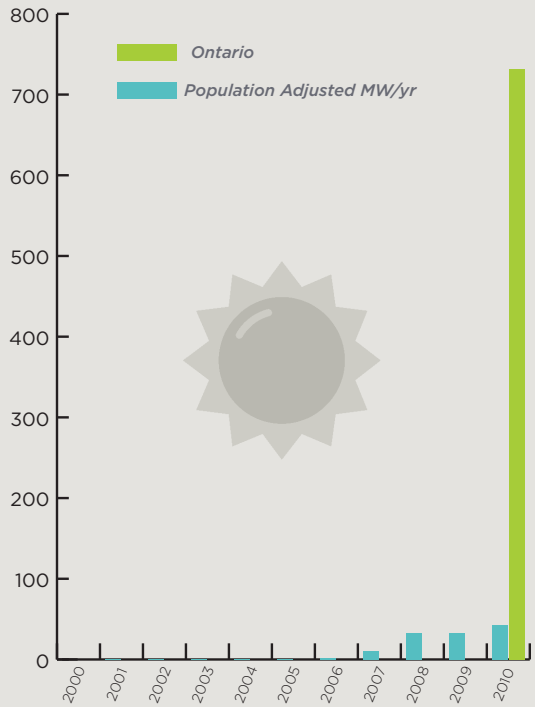
### ONTARIO VS FRANCE, WIND



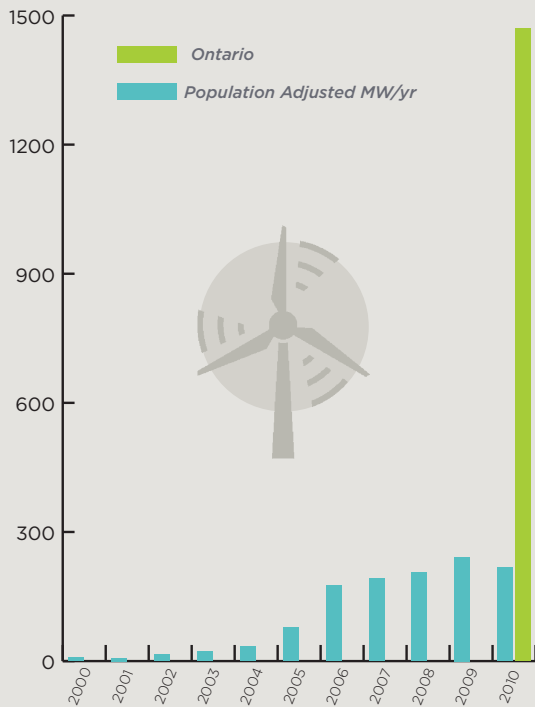
FRANCE (2001)  
7MW

ONTARIO (2010)  
1469MW

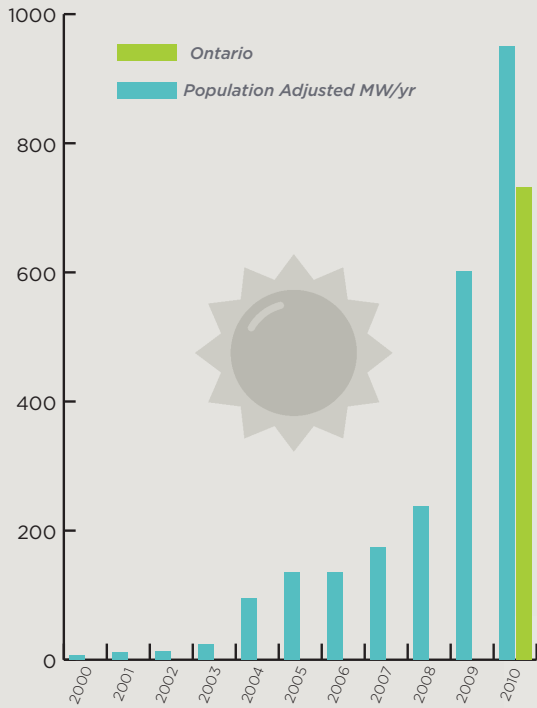
### FRANCE SOLAR ENERGY DEVELOPMENT



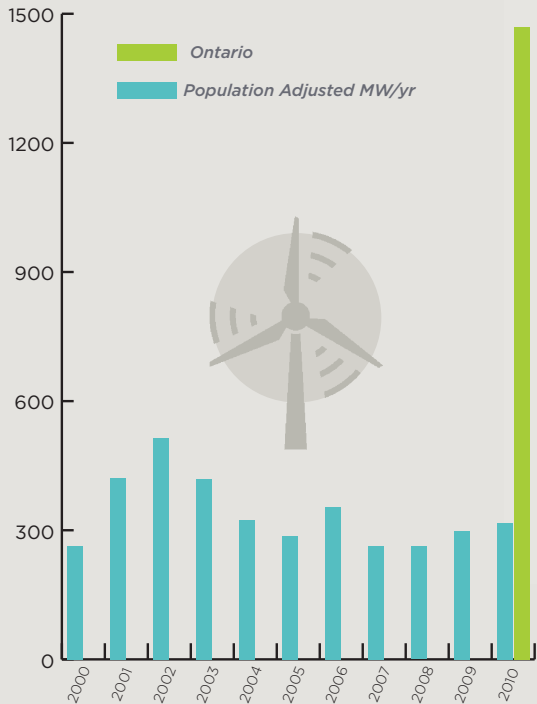
### FRANCE WIND ENERGY DEVELOPMENT



### GERMANY SOLAR ENERGY DEVELOPMENT



### GERMANY WIND ENERGY DEVELOPMENT

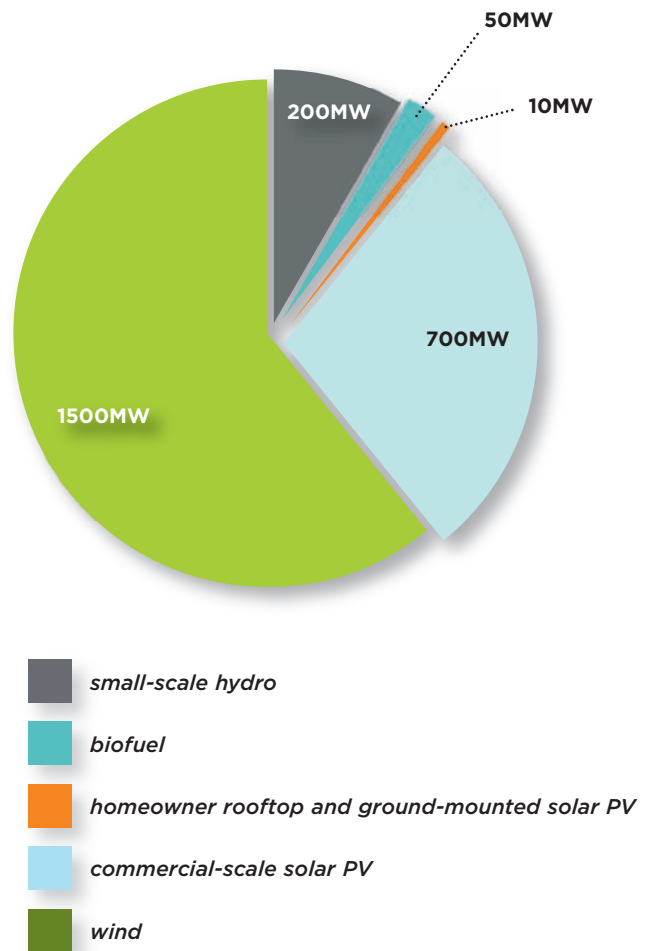


## Almost three applications an hour, 24/7 in just the first year

Ontarians have embraced clean energy in stunning numbers. In just the first year, more than 22,000 applications were received for renewable energy contracts. That's almost three an hour, 24/7, for the whole year.

And contracts for almost 2,400 megawatts (MW) of installed renewable energy capacity were awarded in 2010 alone, more than half for wind power. One MW of electricity can power about 1,000 homes.

### ONTARIO RENEWABLE ENERGY GENERATION: Contracts Approved to October 2010

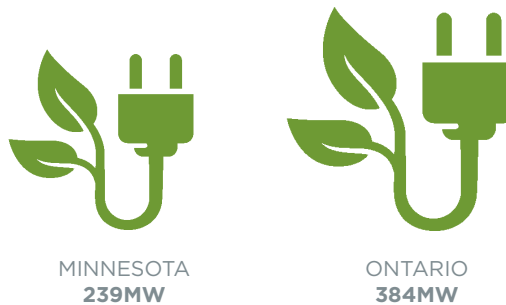


## Community ownership: A North American leader

Ontario is also on track to being home to the most community-owned renewable power outside of Germany and Denmark. Nearly 16 per cent of all contracts awarded in the first year went to community groups, representing almost 400 MW of renewable energy capacity. Many of these are owned by First Nations, and hold great promise in invigorating Aboriginal economies across the province.

In only the first year, Ontario has surpassed Minnesota to have more renewable power owned by the community than anywhere else in North America.

### ONTARIO VS MINNESOTA



## WHAT'S A FIT?

FIT, or feed-in tariffs, are simply payment for each kilowatt-hour (kWh) of electricity produced by a renewable energy generator. It doesn't matter what kind —from a solar system on a roof to a windmill offshore — if projects generate fewer than 10 KW, they're known as microFIT. Most of these are solar.

The rates paid to those generating the electricity differ, because the costs of generation differ, too.

In adopting feed-in tariffs, considered to be the single-most successful way to kickstart renewable energy development, Ontario is part of a growing crowd. Soon, almost a billion people will live in countries with or about to get feed-in tariffs.

Embracing this clean energy solution is a major factor in Ontario being a go-to place for clean energy investment.

## Report card: Ontario gets an A-

CLEAN ENERGY REPORT CARD		
PLACE	MARK	GRADE
GERMANY	90	A
FRANCE	90	A
<b>ONTARIO</b>	<b>84</b>	<b>A-</b>
SPAIN	80	A-
VERMONT	54	D
MAINE	43	F
WISCONSIN	36	F
CALIFORNIA	28	F

“Ontario has developed a world-class system of advanced renewable tariffs that rivals successful programs in Europe. Ontario’s program is superior to any other found in North America...and ranks higher than that of Spain, one of the European pioneers in renewable energy development.”

- **Paul Gipe**, author, *WIND ENERGY COMES OF AGE*. Recipient of the World Wind Energy Award (2008); ‘Person of the Year’ (1998), American Wind Energy Association.



## Workers in the clean energy economy

Samco Solar makes solar racking in Toronto. But since the 1970s, they built things like car chassis and metal studs for the automotive and building sectors. When the global financial crisis hit, demand for these products dwindled.

So, Samco looked for new business lines, and today is partnered with SunEdison — a global solar company — making the racks to mount solar panels on rooftops or on the ground. It's an example of the economic transformation towards a clean energy economy.



“When they first approached me, I was attracted by the pay. Once I got into it, I started to realize that it’s the first job I’ve ever had that has some effect on every single person in the province.

Most of the reaction [from friends] is ‘neat’. People say, ‘hey, I know there are solar panels, but I never thought of the fact that people had to build stuff to make them’.

My kids think it’s neat. ‘Dad’s doing something good’.”

**GARY CUMMINGS**, PRODUCTION LEAD, SAMCO SOLAR, TORONTO



“I was unemployed when I got this job, so the *Green Energy Act* definitely created a job for me. I was unemployed for roughly four months before this job came along.

I think the future is green jobs, especially for the people looking for work. For myself, and a lot of people in manufacturing, [you hear] manufacturing seems to be dying. It really isn’t dying, it’s changing, there’s a shift.”

We’ll be hiring here. Going to two shifts. I’m telling you, man, it’s building.”

**FRED DINN**, MACHINE OPERATOR, SAMCO SOLAR, TORONTO

## New Green Energy Jobs in Ontario



Many companies conduct work unrelated to the GEA, or operate in regions outside Ontario. Those those jobs are not included here.

## First Nations economic opportunity through renewable energy

Living more sustainably and engaging the potential of the First Nations workforce are two of the most pressing challenges we face today. On the Alderville First Nation north of Cobourg, the *Green Energy & Green Economy Act* is responding with the first Aboriginal solar feed-in tariff project.

**“For centuries, Aboriginal people have cherished and appreciated the sun as a giver of life. It’s therefore only logical that we as a people embrace this technology and take advantage of the economic opportunity before us.”**

**- REESE SIMPSON,** ECONOMIC DEVELOPMENT OFFICER,  
ALDERVILLE FIRST NATION

The five megawatt installation will be operational next year. And in partnership with Fleming College in Peterborough, the First Nation is training 18 locals in solar technology and installation.

It has company. In the first year, 16 Aboriginal contracts have been awarded, helping Ontario have the highest levels of community renewable power ownership in North America. More than 100 First Nation workers are being trained for green collar jobs in the solar industry alone.



**“Only 180 of the Dokis First Nation members live on the reserve lands because everyone has to move to get jobs. Maybe some of our members can move back.”**

**- CHIEF DENISE RESTOULE,**  
DOKIS FIRST NATION



## FINANCIAL STABILITY FOR A CENTURY

The Dokis First Nation on the French River is building a run-of-the-river hydro dam that will power 30,000 homes. It’s projecting \$2.5 million in revenue in the first five years, with revenue for a century to come.

Those funds will be invested in economic development, business start-ups and meaningful jobs. Many will be in a new tourist industry taking advantage of the French River.

The *Green Energy & Green Economy Act* represents economic opportunity for Aboriginal communities so often passed over.

## 15,000 fewer tonnes of emissions; 120 more jobs

The Pukwis wind park is financed by a co-operative share offering and traditional commercial loans. It's a joint venture between the Chippewas of Georgina Island (in Lake Simcoe) and the Windfall Ecology Centre.

Construction is already underway on the 20 megawatt wind farm that will power 7,500 homes and eliminate 15,000 tonnes of greenhouse gases. About 120 jobs are involved in construction, with hundreds over its lifetime.

But the First Nation is planning ahead, and planning for long-term economic growth. One possibility for the revenue generated is a renewable energy training centre, helping Ontario become a hub in the clean energy field. And helping Aboriginal communities become true partners in Ontario's economic future.



## Farmers harvesting the sun and wind: rural rejuvenation

For 31 years, Bryan Gilvesy has harvested the sun. Without it, there are no crops or feed for cattle. He says putting solar power on his farm is a natural fit.

The cattle farmer from Norfolk County is one of thousands of Ontario farmers who are leading rural economic rejuvenation through renewable power. And he doesn't see anything odd. "I'm just trying to expand what my farm produces. I already harvest the sun with my plants, so solar power is a natural fit," he said.

Just a year into the *Green Energy & Green Economy Act*, Gilvesy sees about 30 solar installations on the drive from Guelph to his home near Tillsonburg. Soon, he will have a 45 kilowatt solar installation on his roof, which his neighbours don't mind a bit. "It's a zero impact solution," he said.

But it's not a zero benefit solution. Farm values are rising, and Farm Credit Canada, which lends to farms, calls Ontario's feed-in tariff program, "a great investment."

David Lobe agrees. He manages an egg farm around Listowel, northwest of Kitchener. It already has three, 10 kilowatt ground-mounted solar installations that track the sun — providing energy to the grid, and income for BLT Farms. They were installed in August.

"The technology is there and it just makes sense for us," he says. "It adds a revenue stream."

But BLT Farms' solar panels do more than that. They send a positive message about the transformation that's underway across rural Ontario. In fact, the farm is so positive about them, it put them out front where Lobe says they don't take up much room at all.

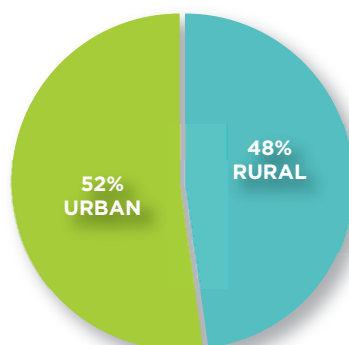
"The footprint isn't that big. Maybe 20 by 20 feet [about 37m<sup>2</sup>], so it doesn't take up much land," he said.

And they're popular. Lobe says he knows many other farmers interested in having microFITs on their land. Many are clearly more than just interested. In the past year, he's seen the number of solar panels on the drive to work grow from none to about ten.

Across Ontario, more than 22,000 applications have been made, with more than 3,000 contracts already executed.

### RURAL REJUVENATION

*Where people live who've applied for a microFIT*



## WHO'S THE ENERGY PRODUCING PROVINCE AGAIN?

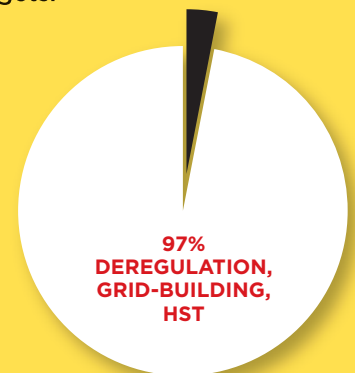
Farmer Bryan Gilvesy often speaks with farmers in Alberta, home of the tar sands. We asked him what farmers there, or in Manitoba and Saskatchewan, say about Ontario's solar farm explosion. "They don't know why they're not in the energy game. They're jealous," he said. "[Solar] is a natural fit for farmers. Farms are places where it fits perfectly."

"They're everywhere in Europe. This isn't rocket science. And lots of people want them. Hopefully you're able to not have as many coal plants."

- DAVID LOBE, EGG FARM MANAGER

## POLLUTION ADVOCATES' BIGGEST MYTH

The simple fact is clean energy is behind only three per cent of electricity price increases. And as Ontarians know — just like computers and cell phones — the more new technology is used, the cheaper and better it gets.



## Local ownership, local economic benefits: community power works

What do the Boys & Girls Club of London, Burlington Green environmental group and a spiritual centre in Niagara Falls have in common? They're all developing renewable energy projects with the help of the Community Energy Partnership Project (CEPP).

It helps community-owned generation along. So Ontarians and their communities can invest in, and use, their own renewable power. It's working, too, and together with First Nations projects, Ontario already has the highest levels of community ownership in North America — solar, wind, bioenergy and water.

It's win-win, helping us reduce coal's damage by generating clean, renewable energy at a local level. And it's popular, with 22 projects so far, which will leverage \$1.7 million in provincial grants into \$105 million in investment. That's almost a ten-fold return, helping Ontario become a renewable energy hub.

In Burlington, the local environmental group Burlington Green will issue a share offering to raise local capital to finance its solar rooftop project next year. In the future, we could see hospital foundations or universities using their roofs to generate funds, too.

In Toronto, the Toronto Renewable Energy Cooperative has already raised community capital to help Ontario farmers erect 10 kW ground mount solar systems. Another share offering is planned for early next year to support other collectively-owned solar projects.

Elsewhere, small-scale dams are going on rivers and community groups like the Boys and Girls Club in London are getting on board with solar projects. The beauty of community-owned power is that it empowers the community, big or small. Instead of importing coal and exporting money, Ontarians can improve their communities by making energy spending local.



Niagara Falls, one of nature's biggest water power generators, provides a fitting backdrop for the Mount Carmel Spiritual Centre's renewable shift. Just steps away from the rushing Niagara River, the centre's many users are seeing energy transformation first hand.

"For a long time we've had a vision of how to be sustainable on the centre's land, and solar power was a dream that I've longed to realize," says Father Stanley Makacinas. Learning of the CEPP was just the ticket Father Stan needed.

Soon, the centre hired a local solar power professional. And the centre learned it had the capacity for up to 1.4 megawatts of solar panels on a flat, unobstructed bit of its site, and up to 100 kilowatts on the roof of one of its newer buildings. Structural and engineering studies are next, and outreach to the local community has begun.

Members of the spiritual centre's community can support using the sun to power its good work through donations, and its staff is already planning on renewable and solar energy outreach to the many people who visit each year.

Father Stan looks forward to other faith-based communities developing their own renewable energy projects, too: "Solar power fits in with our theology... to be stewards of creation and to protect it".

## More windmills, less coal pollution



### WORK NEEDED ON ENERGY EFFICIENCY

While the *Green Energy & Green Economy Act* did contain some energy saving measures, Ontario has yet to fully embrace conservation. This is the cheapest way to increase energy supply, and for Ontarians to enjoy cleaner air by burning less coal and oil. While some of Ontario's largest utilities are working on putting better conservation programs in place, a robust energy efficiency program has yet to arrive. Saving energy is a crucial ingredient in a more reliable energy grid, and saving Ontario families money.



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