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### Solar Nova Scotia Courses in Sydney

Thirty-one people attended Solar Nova Scotia's Solar Basics presentation by Don Roscoe at the James McConnell Library in Sydney on Friday, June 23.

The next day at the Membertou Trade and Convention Centre, Don provided a course for 15 people (builders, home designers, an architectural technology student, and an engineer) about passive solar construction on air recirculated heat storage slabs.

"Both facilities and their staff were great", said Don.

### Solar News from June and July

Our bi-monthly newsletter brings you Solar Nova Scotia's news from the past two months and announcements of any upcoming Solar Nova Scotia activities. It provides links to other solar and net zero news for Nova Scotia, and to some solar news from across Canada and around the world.

The NS Department of Energy has announced that the Solar Electricity for Community Buildings Program is accepting applications **starting July 31**.

Mi'kmaq Nations, municipal governments, universities, colleges, and non-profit organizations are eligible to compete for contracts to generate electricity from up to 50kW of solar photovoltaic (PV) panels and to sell to their utilities for 20 years. Dates and times for information sessions and application forms can be found at [novascotia.ca/solar](http://novascotia.ca/solar). Applications must be received by September 29.

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Newfoundland and Labrador and Nova Scotia's Emera are facing rising costs on their [Muskrat Falls hydro project](#). The present cost estimate is \$12.7 billion, with financing. The cost for power from Muskrat Falls for Nova Scotia,

[Efficiency Nova Scotia's Annual Report for 2016](#) is now available.

[The Antigonish Community Energy Coop is working with Appleseed Energy](#) on the first installation for Group Buy #2. See Facebook page from July 18 through the above link. See also [the Coop's excellent website](#) with its explanation of how the group process works.

A member of the coop who recently dropped in on the Friday evening Solar NS conversation at the Lions Head Tavern and Grill said there were 18 installations completed in Group Buy #1 last year. This year, after almost 100 assessments, 24 members have made deposits in Group Buy #2. Installations on homes, barns, and municipal buildings by Appleseed Energy or Nova Sun Power are ongoing.

Nova Solar Capital has announced that the [Solar Scotia Energy CEDIF](#), the first solar CEDIF in Nova Scotia, has met its minimum funding for what will be, to date, the largest residential solar project in Atlantic Canada. So far the CEDIF has raised nearly a million dollars. It will also create a solar hardware distribution business allowing local solar PV installers to source hardware from a Maritime company.

[Canada's first Passive House Verifier is Natasha Pearce](#), a Nova Scotia Community College graduate and Program Manager at Efficiency Nova Scotia.

The EAC, with six other sponsors, hosted the final session of the six - session series on Nova Scotia's proposal for cap and trade on July 29. You can watch the video of part six [here](#) and the videos of parts 1 to 5 [here](#). The EAC's summary of issues addressed by panelists can be found [here](#). There were panelists who felt cap and trade is the wrong approach. Others who felt that what the Nova Scotia Government is presently proposing is unlikely to encourage innovation or meaningfully reduce emissions. Details, however, are yet to be announced

Transition Bay St. Margarets organised a public lecture about [off grid living](#) at the Tantallon Public Library on July 27.

[The Canadian Government announced a \\$2 billion five-year Low Carbon Economy Fund](#) to help advance The Pan-Canadian Framework on Clean

The Government of Canada will be hosting [Generation Energy: Moving Canada Forward](#) (October 11-12, 2017). Details not yet available.

[The Senate Committee on Energy, the Environment, and Natural Resources](#) says we need to electrify the economy and to drive electric cars to reduce the 23 per cent of our greenhouse gas emissions coming from the transportation sector (2014 data).

[Genus Capital Management's research team has demonstrated the real financial risk](#) associated with higher levels of portfolio exposure to fossil fuel companies. That's bad news for Canadian investors as Canada has a significantly higher carbon intensity than other developed investment markets. But finding non-carbon portfolio possibilities (such as Nova Solar Capital's Solar Scotia Energy CEDIF, see above) is still a challenge.

[Clean Energy Canada says mines across the country](#) can provide the metals needed for manufacturing solar panels.

BOMA Canada (Building Owners and Managers Association of Canada) [launched its Net Zero Award program](#) supported by Natural Resources Canada. It also released its [2017 National Green Building Report](#) in June.

## **New Brunswick**

[NB Power has installed a smartflower](#) in Marysville and is promising to be a leader in the promotion of renewable energy sources in the province.

## **Newfoundland and Labrador**

[Introduced a net-metering program in July](#), but the "total maximum of 100 kilowatts is way too low for the number of people who want to install renewable energy systems".

## **Ontario**

[The Ontario government has invested \\$20 million to build approximately 500 electric vehicle charging stations](#). By the end of May, about 43% had been installed. According to Steven Del Duca, Ontario's Transport Minister, speaking at a conference in Markham at the end of May, "the most significant challenge in bringing more electric vehicles to Canada's roads is a lack of supportive

Ontario is looking into [revising its Condo Act](#) to remove the obstacle which discourages condo owners from buying electric vehicles - no charging stations.

## BC

GreenPower Motor Company, headquartered in Vancouver, has won the contract to supply Porterville, California with [10 zero-emission electric transit buses](#). For this it is building a new manufacturing plant in Porterville. The plant could create 576 new jobs, directly and indirectly. [GreenPower Motor Company also produces double-decker electric buses](#).

If you are visiting BC September 22 – 24, be on the look out for the British Columbia Sustainable Energy Association's three-day showcase of renewable energy projects across the province: [Green Energy Doors Open BC 2017](#) .

Vancouver's Municipal Government is [rolling out a solar energy demonstration project](#) that will provide solar energy for six boat sheds, the Vancouver Public Library, a fire-hall, and electric vehicle charging stations.

Bullfrog Power and the City of Nelson are assisting in [the creation of a community power project](#).

In other countries conversion to electricity and solar is growing rapidly. Below are just a few examples. Some of the sources from which they are taken are full of other examples.

Technologies and project economics are changing so fast in the energy sector that they are disguising for policymakers how fast demand is falling and supply increasing, [making energy models and scenarios for countries and communities obsolete almost as soon as they are published](#).

Here are the European countries making the fastest [progress towards meeting their renewable energy goals](#).

[New solar power was the source of the greatest growth in renewables last year](#), half of all new renewable capacity.

Solar is accelerating the green

needed, especially in the transport and heating sectors, if we are to avoid the worst impacts of global warming.

G20 leaders were given [a six-point plan](#) for turning the carbon dioxide tide by 2020. Decarbonizing the world economy requires faster action than current government plans propose and requires rapid development of renewable energy, especially from vast solar farms.

NGOs have published a study showing how G20 [governments are still providing nearly four times more financial support to fossil fuels than to renewable energy](#).

[The cost of batteries is declining as more large gigafactories are built](#), and a new generation of products with superior density is launched. Battery pack prices in 2017 may fall to \$73 per kWh, down from a volume-weighted average of \$273 per kWh in 2016.

A joint India-U.S.A. study has documented [how pollution is reducing the energy output from solar panels](#). This highlights the importance of emissions controls for maximizing energy production from solar.

## **The Beginning of the End for the Internal Combustion Engine in the Automotive Industry?**

Powering electric cars directly from solar is becoming a distinct possibility as research on perovskite solar cells advances. You can get a taste of this in the pvbuzz story [here](#). The whole story, however, is behind the pvbuzz subscription pay wall. Scientists are searching for non-toxic materials which could [replace the lead in perovskite solar cells](#) without negatively affecting performance.

[More than two million electric cars were on the road around the world in 2016](#). More than 90% of these were in China, the US, and Europe, but it is Norway which has the highest percentage of electric cars on the road.

The Dutch bank, ING, predicts that [by 2030 all new cars sold in Europe will be](#)

says, the range cars can travel on one charge will increase, and charging infrastructure will become more widespread.

[After next year, Volvo will make only electric or hybrid cars.](#)

[Panasonic sees a future for solar on car rooftops.](#) It is producing a 180-watt array of solar cells to be fixed to the roof of Toyota's latest Prius plug-in hybrid.

[Canadian auto supplier Magna International Inc. will produce BMW's new hybrid](#) in Austria.

## Australia

[Tesla will build a 129MW lithium ion battery, the world's largest lithium ion battery](#), to power a renewable energy project in South Australia. The world's current largest storage facility is 30 MW. Elon Musk anticipates that the project, to be completed by December, will help stabilise the grid and bring down energy prices for South Australians.

<https://www.pvbuzz.com/tesla-to-build-largest-battery-storage-facility-australia/>

## Chile

SolarReserve (see more under USA below) is proposing to build [a 390 MW solar thermal facility with with 5,100 MWh of energy storage](#). The facility will provide a non-intermittent 24-hour supply of energy, of particular importance for 24-hour industrial operations, at a price competitive with fossil fuel-based generation. SolarReserve bid 6.4 cents per KWh, without subsidies, in Chile's last energy supply auction.

## China

In 2016, China produced 48 GW of solar panel capacity; in 2017 this is expected to rise to 60 GW, and [in 2018 it will rise another 25%](#). Despite problems with grid capacity China will soon reach its domestic solar installation goal for 2020 of 110 GW.

As China works to reduce its pollution and use of coal, [the demand for electric vehicles](#) and for the infrastructure to support them is increasing rapidly. Clean Energy Canada says, "It's happening at a scale that is difficult for those of us

## France

[No more gas or diesel cars will be sold in France after 2040.](#)

## Norway

Norway, now leading the way in reducing car emissions, [is putting in place policies](#) to help make all new cars sold by 2025 zero emission (electric or hydrogen) or low emission (plug-in hybrids).

## UK

Britain, where the biggest environmental risk to public health is air pollution, has announced that [starting in 2040 it also will ban the sale of all new diesel and petrol cars and vans](#). ClientEarth, the campaign group that pursued the government through the courts over the air pollution crisis, welcomes the announcement but said more immediate action is needed. London wants a fully-funded diesel scrappage fund ASAP.

## USA

How many square miles would be needed for panels and batteries for solar to power the whole USA—for transportation, electricity, and heating? About 100 miles by 100 miles for panels and a square mile for batteries, [Elton Musk recently told more than thirty state governors](#). That's "a fairly small corner of Nevada or Texas or Utah". [Here's Musk](#) in person with the big picture!

Private American utilities, however, are [lobbying against solar](#) at the state level.

Even less space would be needed for solar panel installations with [the new solar cell being developed at George Washington University](#). This cell concentrates and converts direct sunlight to electricity with 44.5 percent efficiency. The most common solar cells currently in use convert only 25 percent.

The California company, SolarReserve, says [it will build the largest solar power plant in the world](#), a 10-tower concentrated solar array, on a 25-square-mile plot in the Nevada desert. The plant will focus a 1-mile circle of mirrors on 640-foot central towers to heat molten salt to more than 1,000 degrees Fahrenheit. The superheated salt will then be used to boil water to drive power turbines, producing between 1,500

Another California company, Solar Gaps, is allowing renters of apartments, homes and offices to go solar too [thanks to their solar smart window blinds](#).

In Florida, a south Miami ordinance [will require rooftop solar panel installations for all new residential construction](#) and for all building renovations replacing over 75 percent of a residential structure. The ordinance was modelled after similar ordinances recently passed by San Francisco and three other California cities.

Fourteen states and the District of Columbia have policies to enable community solar, which allows multiple customers to share in one solar plant. But community solar isn't growing as fast in the US as anticipated. The Sol Source published a four state comparison last month. [Pvbuzz published an excerpt](#).

### Other news?

If you have any solar news, particularly solar news from Nova Scotia, please share it with us at [woolfrey@chebucto.ns.ca](mailto:woolfrey@chebucto.ns.ca). Thanks from your newsletter team: Alison, Michael, and Joy.

### Solar Nova Scotia Membership

**Solar Nova Scotia has three kinds of membership:**

Ordinary members receive the newsletter, may volunteer, and can attend and vote at the Annual General Meeting. Contributing members and Corporate members, in addition, provide important financial support for Solar Nova Scotia's work.

All members are welcome to join the solar conversation in Halifax on Friday evenings around 5:00 PM at the Lions Head Tavern and Grill, corner of Robie and Sullivan Streets.

Please renew or become a member of Solar Nova Scotia at <http://solarns.ca/About-Us/Become-A-Member>.

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