

Solar energy production has enormous potential in southeastern Ontario: study

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Solar power in southeastern Ontario has the potential to produce almost the same amount of power as all the nuclear reactors in the United States, according to two studies conducted by the Queen's University Applied Sustainability Research Group located in Kingston, Canada.

These studies, led by Queen's mechanical engineering professor Joshua Pearce, are the first to explore the region's [solar energy](#) potential. Professor Pearce was surprised by how many gigawatts could be produced.

"We came up with enormous numbers and we were being conservative. There about 95 gigawatts of potential [power](#) just in southeastern Ontario - that shows there is massive potential," says Professor Pearce, who specializes in solar photovoltaic materials and applied sustainability.

One study, accepted for publication in the journal *Computers, Environment and Urban Systems*, discovered that if choice roof tops in southeastern Ontario were covered with solar panels, they could produce five gigawatts, or about five per cent of all of Ontario's energy. The study took into account roof orientation and shading.

"To put this in perspective, all the coal plants in all of Ontario produce just over six gigawatts. The sun doesn't always shine, so if you couple solar power with other [renewable energy sources](#) such as wind, hydro and biomass, southeastern Ontario could easily cover its own energy needs," Professor Pearce says.

A second study, published in May issue of the journal *Solar Energy*, looked at land in southeastern Ontario that could be used for solar farms. The study considered land with little economic value - barren, rocky, non-farmable areas near electrical grids - and concluded it has the potential to produce 90 gigawatts.

"Nuclear power for all of the United States is about 100 gigawatts. We can produce 90 on barren land with just solar in this tiny region, so we are not talking about small potatoes," Professor Pearce says.

The professor conducted the studies to provide policy makers solid numbers on solar energy potential, as well as find possible solar farm locations for developers.

Also contributing to the studies were Queen's civil engineering student Lindsay Wiginton and mechanical engineering student Ha Nguyen.

Provided by Queen's University

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