



Embodied Carbon & Energy Payback Of Mitrex Solar Cladding

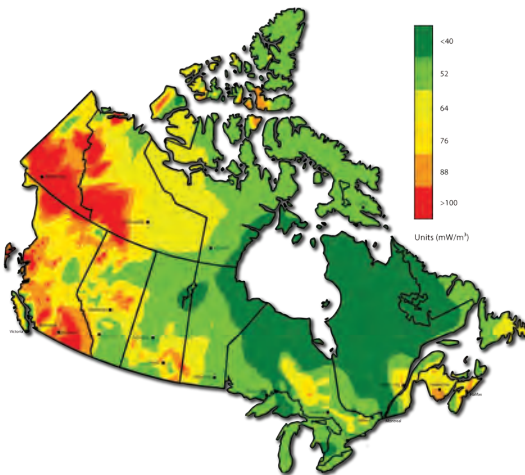
ENERGY NEEDED TO MANUFACTURE A SOLAR CLADDING PANEL

PANEL SIZE	GLASS SIZE	ALUMINUM HONEYCOMB SIZE	TOTAL THICKNESS	NUMBER OF CELLS
6.5' X 3.25'	6.5' X 3.25' X 1/8"	6.5' X 3.25' X 3/4"	1"	72

ITEM	WEIGHT (kg)	% WEIGHT	MJ/kg	kWh	% ENERGY	CARBON (kgCO ₂ eq)
Glass	14.92	52%	35	145.02	13%	9.57
Aluminum	9.58	33%	150	399.29	35%	26.35
EVA	1.47	5%	157.5	64.40	6%	4.25
Backsheet	0.74	3%	125	25.56	2%	1.69
Cells	0.72	3%	2000	500.04	43%	33.00
Interconnections	0.72	3%	60	12.00	1%	0.79
Jbox	0.50	2%	4.375	4.29	0%	0.28
			TOTAL	1150.60		75.94

*To calculate carbon, in Ontario it is ~66g per kWh (in this case, 75.94kgCO₂) | *MJ/kg numbers found from 2018 | Retrieved From: <https://www.electricitymap.org/zone/CA-ON>

AMOUNT OF SUNLIGHT RECEIVED IN CANADA



The amount of energy produced depends on the location and orientation of the panel.

Energy Production

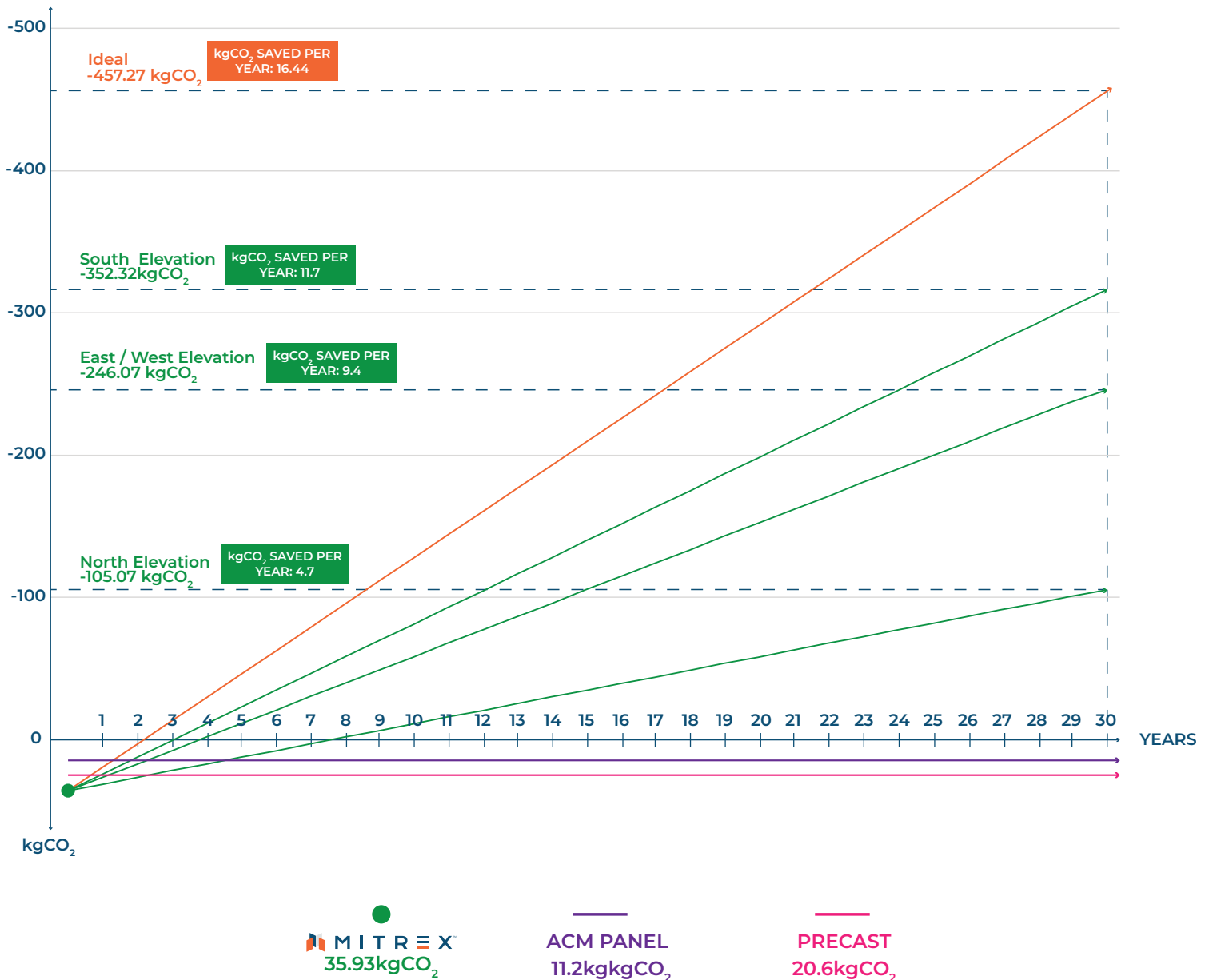
AVERAGE HOURS OF SUN PER DAY (IN TORONTO) FOR A 2M² PANEL (M390-A1F)

	HOURS OF SUN PER DAY	kWh / DAY	kWh / YEAR	PAYBACK TIME (YEARS)	CARBON SAVED PER YEAR (kgCO ₂)	CARBON SAVED AFTER 30 YEARS (kgCO ₂ eq)
Ideal	3.5	1.44	526.51	2.16	34.75	-966.55
South	2.5	1.03	376.08	3.06	24.82	-744.64
East / West	2	0.82	300.86	3.82	19.86	-595.64
North	1	0.41	150.43	7.65	9.93	-297.85

*Direction of panels is vertical | *If half of the energy (kWh) is produced by solar panels, divide by 2 | *Hours taken from PVsyst (and rounded.)

Mitrex VS. Competition

AMOUNT OF CARBON SAVED OVER 30 YEARS FOR A 1M² PANEL



Mitrex solar cladding panels generate enough green energy to offset the carbon needed to produce them, unlike traditional materials. South-facing Mitrex cladding can offset the carbon in 3 years, and remove 744kgCO₂ from the atmosphere in 30 years. On average, Mitrex cladding on all elevations can offset carbon in 4.5 years and remove 557.75kgCO₂ in 30 years.




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