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ONTARIO
Ernie Lee, P. Eng
Technical Sales Manager, Ontario
ernie.lee@owenscorning.com
1.833.670.0208

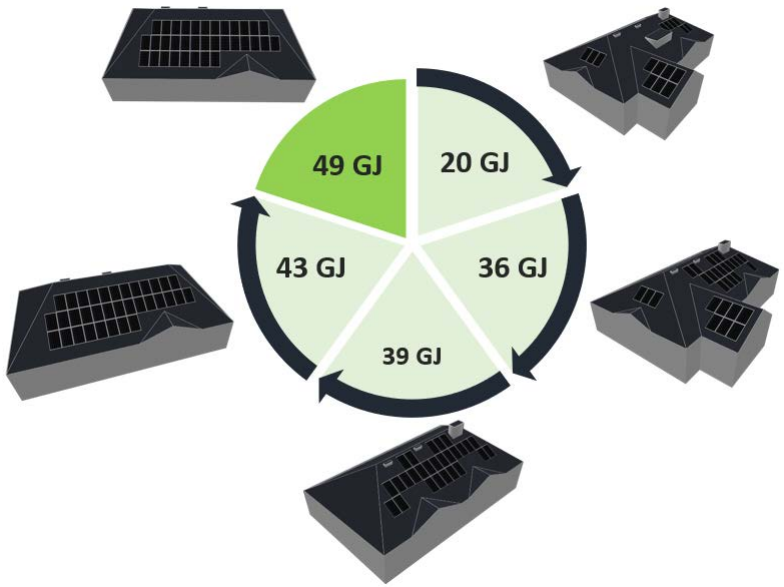
QUEBEC & ATLANTIC CANADA
Salvatore Ciarlo, P.Eng
Architectural Solutions &
Technical Services Manager, Canada
salvatore.ciarlo@owenscorning.com
1.800.504.8294

WESTERN CANADA
Luis Faria, B.Eng, PMP, CMgr MCMI
Technical Sales Manager,
Western Canada
luis.faria@owenscorning.com
1.833.258.5299

Thank you to our NZC Bronze Sponsor Members:

Photovoltaics in the Net Zero Program: Role of the Energy Advisor

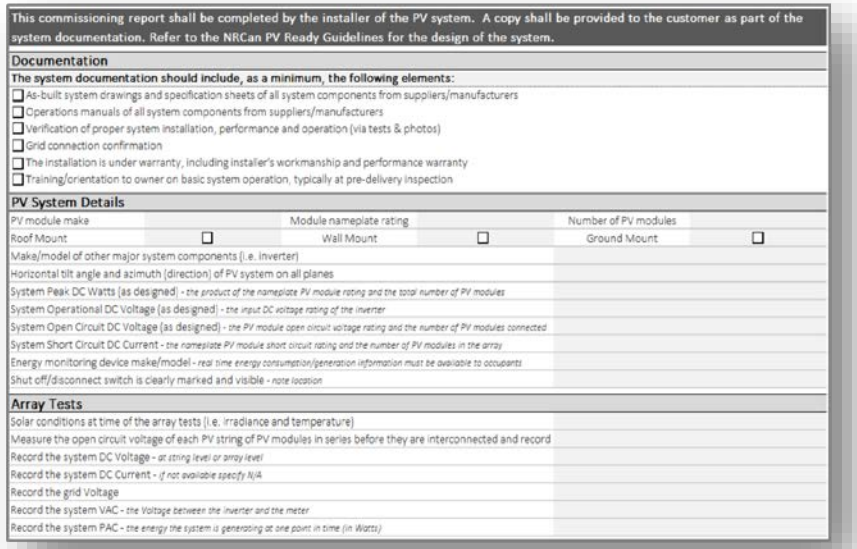
- Net Zero vs Net Zero Ready & Solar Ready vs PV Ready
- Importance of PV Design: the Energy “Budget”
- Net Zero EAs serve as the conduit between builders/renovators & PV professionals



Photovoltaics in the Net Zero Program: Energy Advisor Training & Tools

Net Zero Energy Advisor PV Training approach:

- PV Knowledge
- Tools – and understanding limitations of each
- Verification Forms



This commissioning report shall be completed by the installer of the PV system. A copy shall be provided to the customer as part of the system documentation. Refer to the NRCan PV Ready Guidelines for the design of the system.

Documentation

The system documentation should include, as a minimum, the following elements:

- ☐ As-built system drawings and specification sheets of all system components from suppliers/manufacturers
- ☐ Operations manuals of all system components from suppliers/manufacturers
- ☐ Verification of proper system installation, performance and operation (via tests & photos)
- ☐ Grid connection confirmation
- ☐ The installation is under warranty, including installer's workmanship and performance warranty
- ☐ Training/orientation to owner on basic system operation, typically at pre-delivery inspection

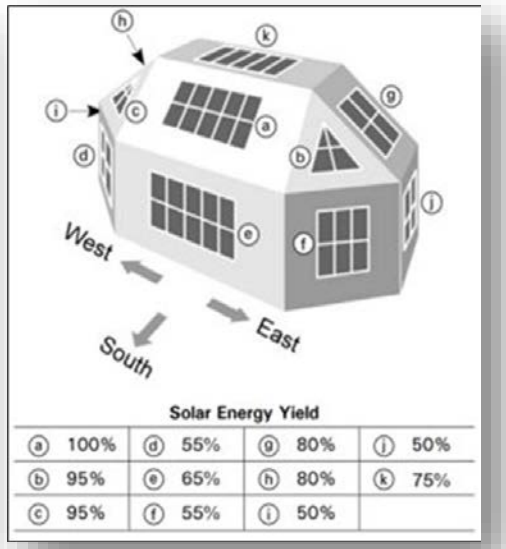
PV System Details

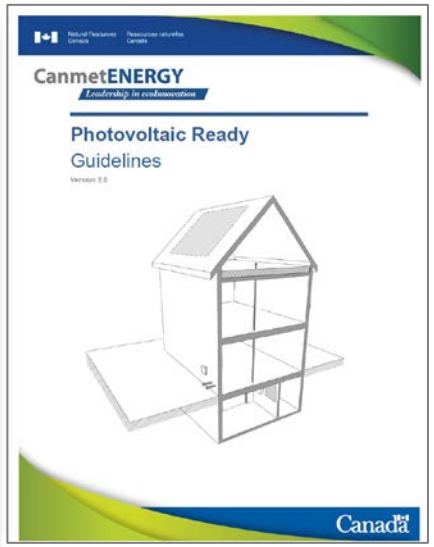
PV module make		Module nameplate rating		Number of PV modules	
Roof Mount	☐	Wall Mount	☐	Ground Mount	☐

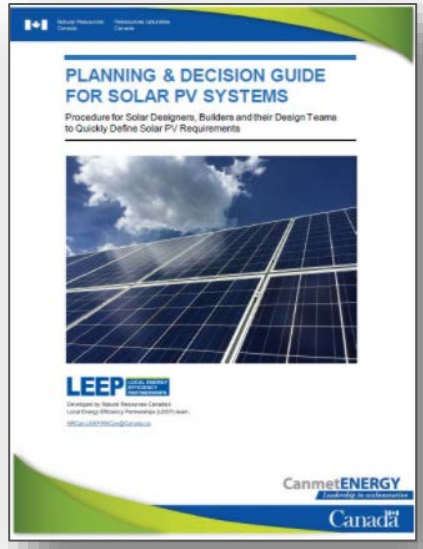
- Make/model of other major system components (i.e. inverter)
- Horizontal tilt angle and azimuth (direction) of PV system on all planes
- System Peak DC Watts (as designed) - *the product of the nameplate PV module rating and the total number of PV modules*
- System Operational DC Voltage (as designed) - *the input DC voltage rating of the inverter*
- System Open Circuit DC Voltage (as designed) - *the PV module open circuit voltage rating and the number of PV modules connected*
- System Short Circuit DC Current - *the nameplate PV module short circuit rating and the number of PV modules in the array*
- Energy monitoring device make/model - *real time energy consumption/generation information must be available to occupants*
- Shut off/disconnect switch is clearly marked and visible - *note location*

Array Tests

- Solar conditions at time of the array tests (i.e. irradiance and temperature)
- Measure the open circuit voltage of each PV string of PV modules in series before they are interconnected and record
- Record the system DC Voltage - *at string level or array level*
- Record the system DC Current - *if not available specify N/A*
- Record the grid Voltage
- Record the system VAC - *the Voltage between the inverter and the meter*
- Record the system PAC - *the energy the system is generating at one point in time (in Watts)*







Natural Resources Canada | Ressources naturelles Canada

10 Steps to PV:

LEEP Planning and Decision Guide for Solar PV Systems

CHBA National Webinar - January 27th, 2021

Canada

Natural Resources Canada | Ressources naturelles Canada

PLANNING & DECISION GUIDE FOR SOLAR PV SYSTEMS

Procedure for Solar Designers, Builders and their Design Teams to Quickly Define Solar PV Requirements

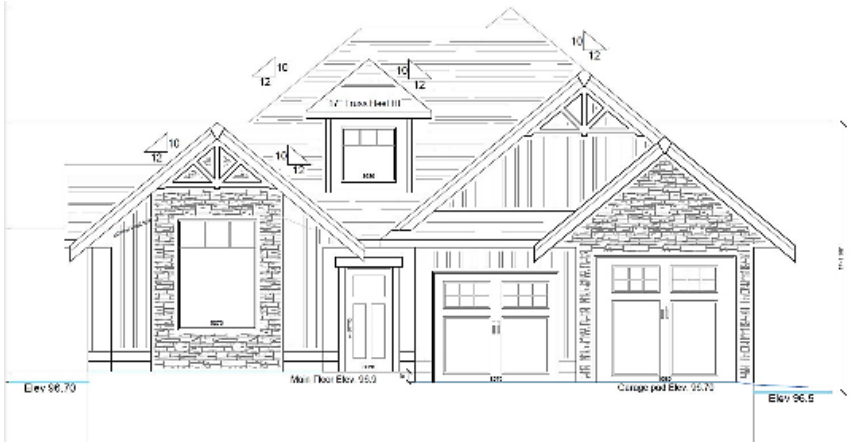
LEEP LOCAL ENERGY EFFICIENCY PARTNERSHIPS

Developed by Natural Resources Canada's Local Energy Efficiency Partnerships (LEEP) team.

NRCan.LEEP.RNCan@Canada.ca

CanmetENERGY
Leadership in ecoInnovation

Canada



Demonstration team

Builder: Jonathan Zerkee, Sonbuilt Custom Homes

PV designer: Ben Giudici, Riverside Energy Systems

Government: Alastair Larwill, CanmetENERGY

Guide Motives

Less Pain

"Solar Ready" South Roof Peppered with Vents

Better Results

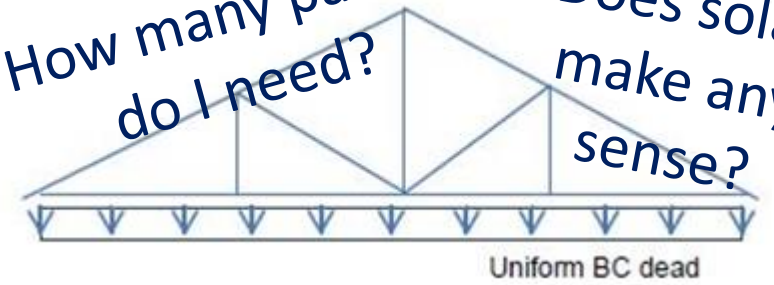
Guide Motives

Reduce Risks and Confusion

Can't the owner just add it later?

What are the electrical impacts?

How many panels do I need?



Does solar make any sense?

What about the structural problems?

The Case Study Project

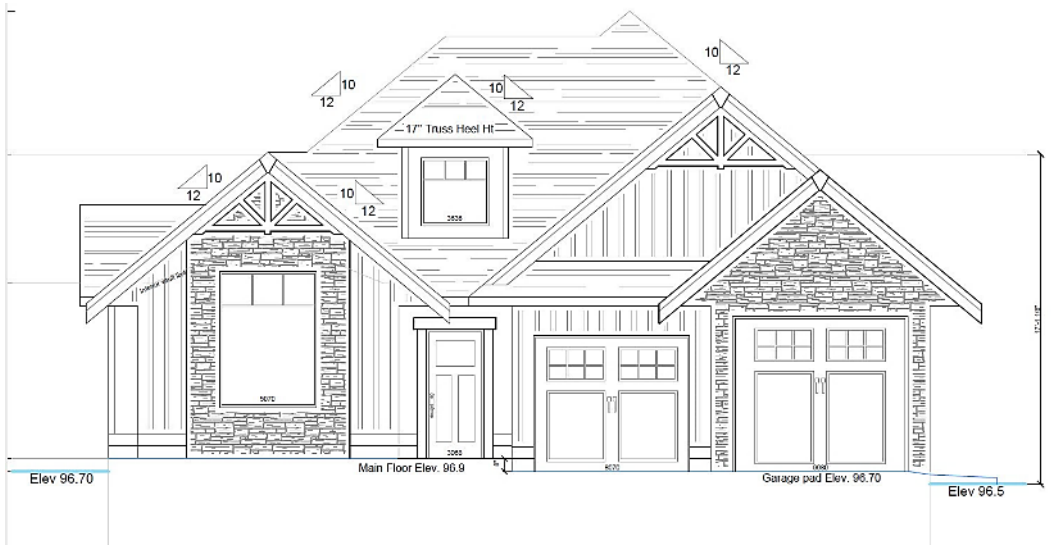
Sonbuilt Custom Homes

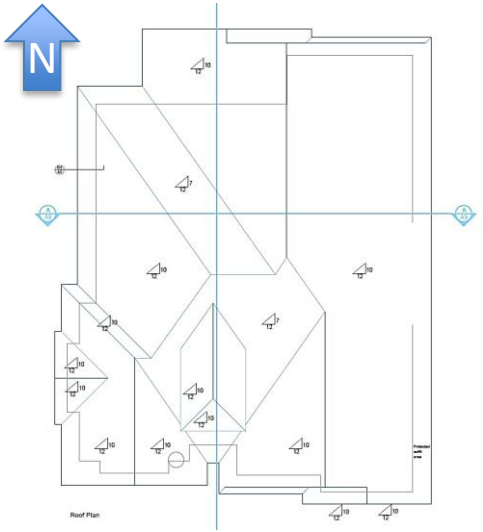
The Vine
Lot 6 Show Home

netzero home
The ultimate in comfort and efficiency

The Case Study Home

Show home for a new development



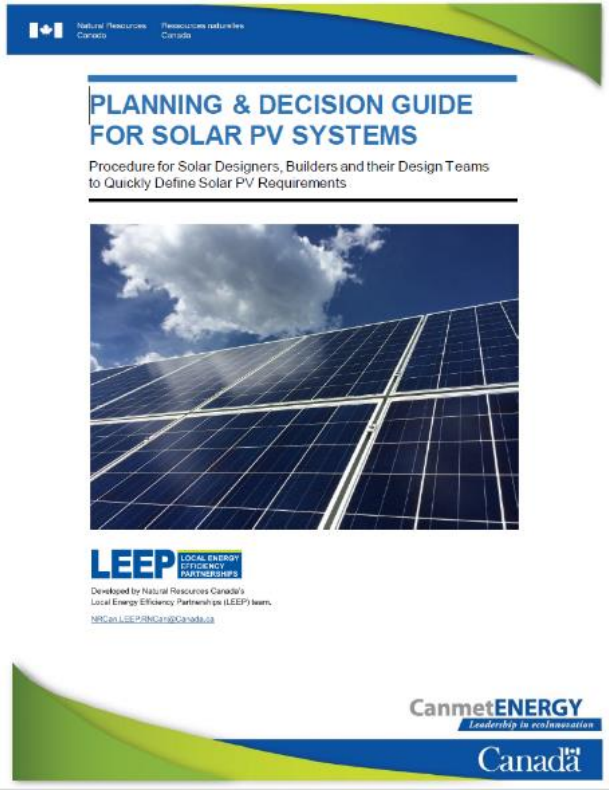


South Elevation

Let’s work through NRCan’s new guide…

Enable builder design team and PV designer to work together to…

- Make 10 key decisions during IDP
- Improve coordination during build
- Enable the builder to confidently champion the use of PV



APPENDIX B: Solar PV System Integration Worksheet

PART I: Pre-Design Considerations

Integrated Design Team:

Builder: _____ **Energy Advisor:** _____

PV Designer: _____ **Other trades:** _____

STEP 1: Builder's Preferred Goal for Solar PV *(circle one)*

- Option 1A: PV Ready Home
- Option 1B: PV Equipped Home
- Option 1C: Net-Zero Ready (NZr) Home
- Option 1D: Net Zero (NZ) Energy Home

STEP 2: Utility Connection Options and Constraints at the Build Site *(circle one and provide details)*

- Option 2A: Feed-in-Tariff (FIT)
- Option 2B: Net-Metering / Net Billing
- Option 2C: Net-Zero Electric
- Option 2D: Self-Use Only
- Option 2E: No Grid Connection Available

Maximum PV Array capacity allowed for grid connection: _____ kW_{peak}

Maximum PV Energy Production allowed for grid connection: _____ kWh/y

STEP 3: Confirm Solar PV Integration Design Requirements

Confirm general design requirements with Integrated Design Team using the STEP 1 & 2 decisions together with the provided **"Planning Matrix"** to secure Builder approval to proceed with the detailed design.

A. **Building Envelope:** Normal build / envelope upgrades *(circle one)*
B. **HVAC mechanicals:** Standard equipment / enhanced efficiency / all-electric *(circle all that apply)*
C. **PV Integration:** PV-Ready installation / Full PV Installation *(circle one)*
D. **Battery Integration:** Battery not required / Battery-Ready / Full battery installation *(circle one)*
E. **PV Inverter Type:** Inverter not required / Grid-tied inverter / Bi-modal inverter *(circle one)*

PART II: Solar PV Integration Design Requirements

STEP 4: Define Annual PV Energy Production Target *(circle one option and provide details)*

- Option 4A: No Specified Energy Target (Max. solar array area available: _____ ft^2 or m^2)
- Option 4B: Partial energy offset Target (Nominal PV energy target: _____ kWh/y)
- Option 4C: Net-Zero Energy Usage (Nominal PV target: _____ kWh/y)

Solar photography completed to measure solar access scores and shading constraints at site: Yes / No

Measured annual solar access score: _____%. Summer: _____%. Winter: _____%.

STEP 5: Define PV Array Location(s) and Size(s) *(circle all options that apply and provide details)*

- Option 5A: House-roof mounted (array area available: _____ ft^2 or m^2)
- Option 5B: Adjacent-structure, specify: _____ (array area available: _____ ft^2 or m^2)
- Option 5C: Ground-mounted (array area available: _____ ft^2 or m^2)
- Solar Access and Shading Assessment for the preferred array location(s):
  - Estimated PV Energy Production: _____ kWh/y)
  - Shading *(circle all that apply)*: External-shading: Yes / No ; Self-shading: Yes / No

STEP 6: Define Electrical Requirements for Solar PV *(circle one option and provide details)*

- Option 6A: Feed-in-Tariff (FIT) circuit breaker (C/B rating: _____ A)
- Option 6B: Main-panel circuit breaker (C/B rating: _____ A);
  specify main panel bus-bar rating: _____ A
- Option 6C: Service Splitter with solar disconnect (solar C/B rating: _____ A)

Other components: *(circle all that apply)*

- Battery Storage Required: yes / no
- Self-Use Controller Required: yes / no
- Bi-modal Inverter/Charger required: yes / no

STEP 7: Structural Impacts and preferred PV Attachment Method

Structural impacts assessed and recommended attachment method defined: No / Yes *(circle one)*

If No, arrange for structural review with input from the PV consultant.

If Yes, indicate type of assessment: Professional structural assurances provided: Yes / No *(circle one)*
Truss manufacturer assurances provided: Yes / No *(circle one)*

and, select the preferred attachment method: *(circle one option or sub-option)*

- Option 7A: Flashed anchors secured into roof sub-structure: *(select one sub-option)*
  (i) J or U-bolts; (ii) Lag-bolts into blocking; (iii) Lag-bolts into scabs; (iv) Lag bolts into top-chords*
- Option 7B: Flashed anchors secured into roof decking
- Option 7C: Standing seam metal roof clamps
- Option 7D: Ballasted systems *(only suitable on roofs with less than 7-degrees of slope)*
- Other method _____ *(specify)*

*** WARNING: DIRECT LAGGING INTO ROOF-TRUSS TOP CHORDS IS NOT RECOMMENDED BY TPIC**

PART III: Preferred Solar Components & Monitoring

STEP 8: Preferred Solar Module Technology *(select one)*

- Option 8A: Polycrystalline-Cell Modules
- Option 8B: Monocrystalline-Cell Modules (basic)
- Option 8C: Monocrystalline-Cell, All black Modules
- Option 8D: Monocrystalline-Cell, Bi-facial Modules
- Other requirements _____ *(specify)*

STEP 9: Preferred Inverter Technology *(select one)*

- Option 9A: String Inverter
- Option 9B: Optimized-String Inverter
- Option 9C: Micro-Inverter
- Option 9D: Bi-Modal Inverter
- Other requirements _____ *(specify)*

STEP 10: Preferred Energy Monitoring Approach *(Required for NZ homes; optional for others)*

- Option 10A: Monitoring not installed
- Option 10B: Basic Net-Zero Home monitoring
- Option 10C: Advanced energy monitoring of the home
- Other requirements _____ *(specify)*

STEP 1: Builder's Preferred Goal for Solar PV

- A subdivision differentiator:
- Build cost: ~$650,000.
- Net Zero Ready upgrade cost: ~$8,000 above builders' standard practice
- Model home goals include:
  - Achieving Net Zero if possible as a talking point
  - Supporting upsell to full Net Zero for homes in subdivision

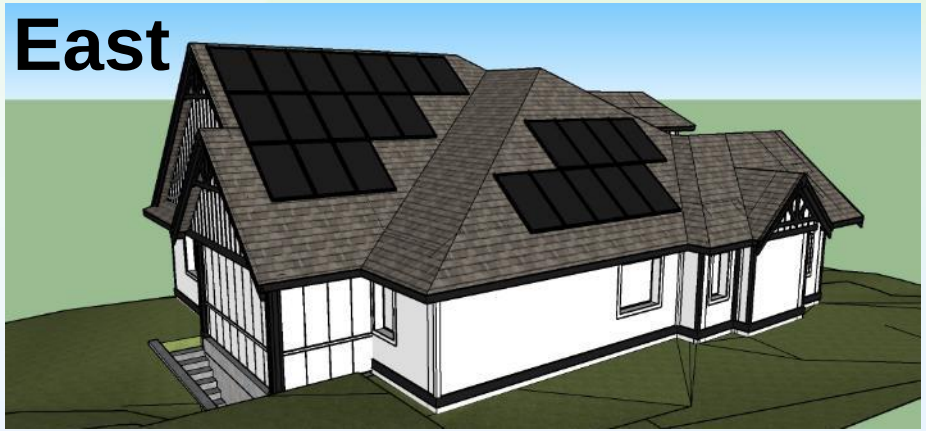
STEP 1: Builder's preferred goals for Solar PV

- Option 1A: PV ready home
- Option 1B: PV equipped home
- Option 1C: Net-Zero Ready Home
- Option 1D: Net-Zero Energy Home

Annual Electrical Energy Use: **9000 kWh/year** based on HOT2000

Net Zero PV Sizing

Available Roof Sections	West	East	South
Size Available (kWp)	12	9.3	No space
Generation (kWh/kWp/yr)	890	890	1020
Annual production (kWh/yr)	**10,200**	8,300	N/A



Shift to Net-Zero Ready ‘PV Equipped’

netzero readyhome
The ultimate in comfort and efficiency

- Dormer removal allows a solar PV system of up to 3.1 kWp on direct south-facing roof harvesting up to 3350 kWh/yr. (approx. 35% of electricity needs)
- Client realizes immediate PV benefits.
- Future 6.5 kWp PV upsizing West or East roof yields Net-Zero performance

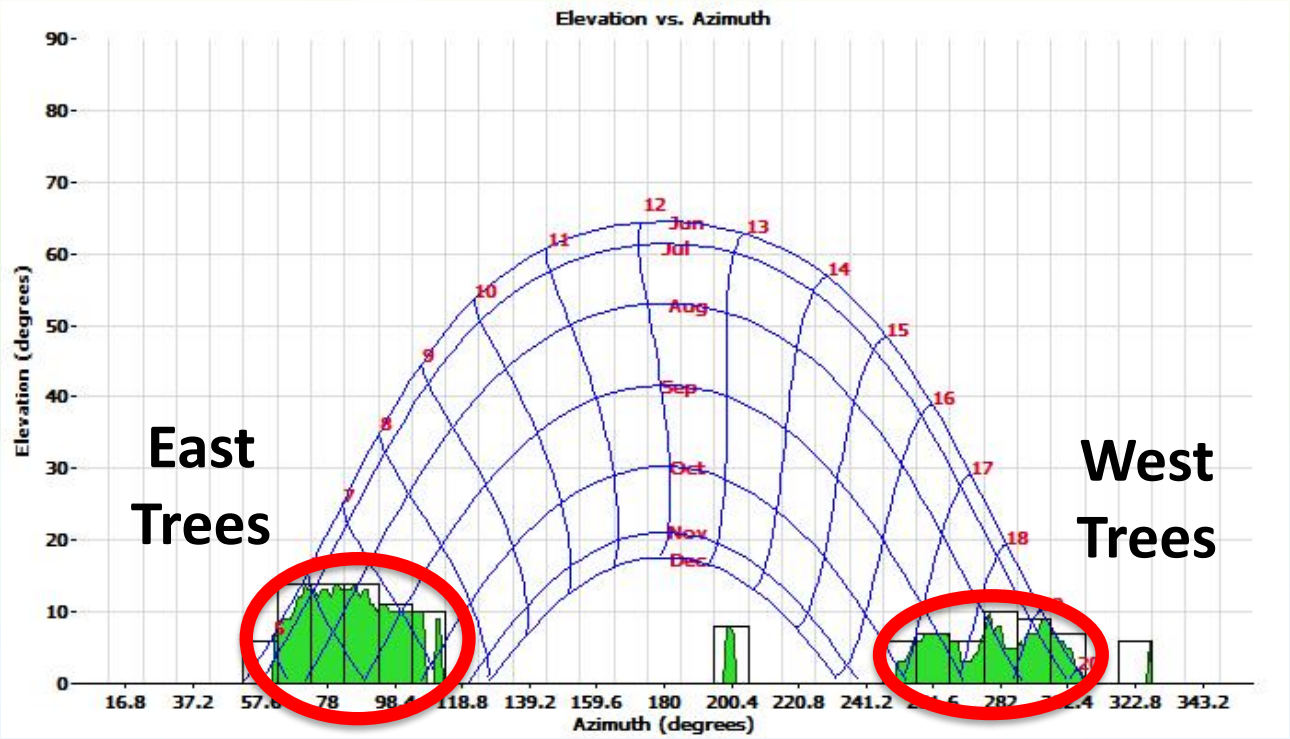
STEP 2: Utility Connection Options and Constraints at the Build Site

- Option 2A: Feed-in-Tariff (FIT)
- Option 2B: Net-Metering / Net Billing
- Option 2C: Net-Zero Electric
- Option 2D: Self-Use Only
- Option 2E: No Grid Connection Available

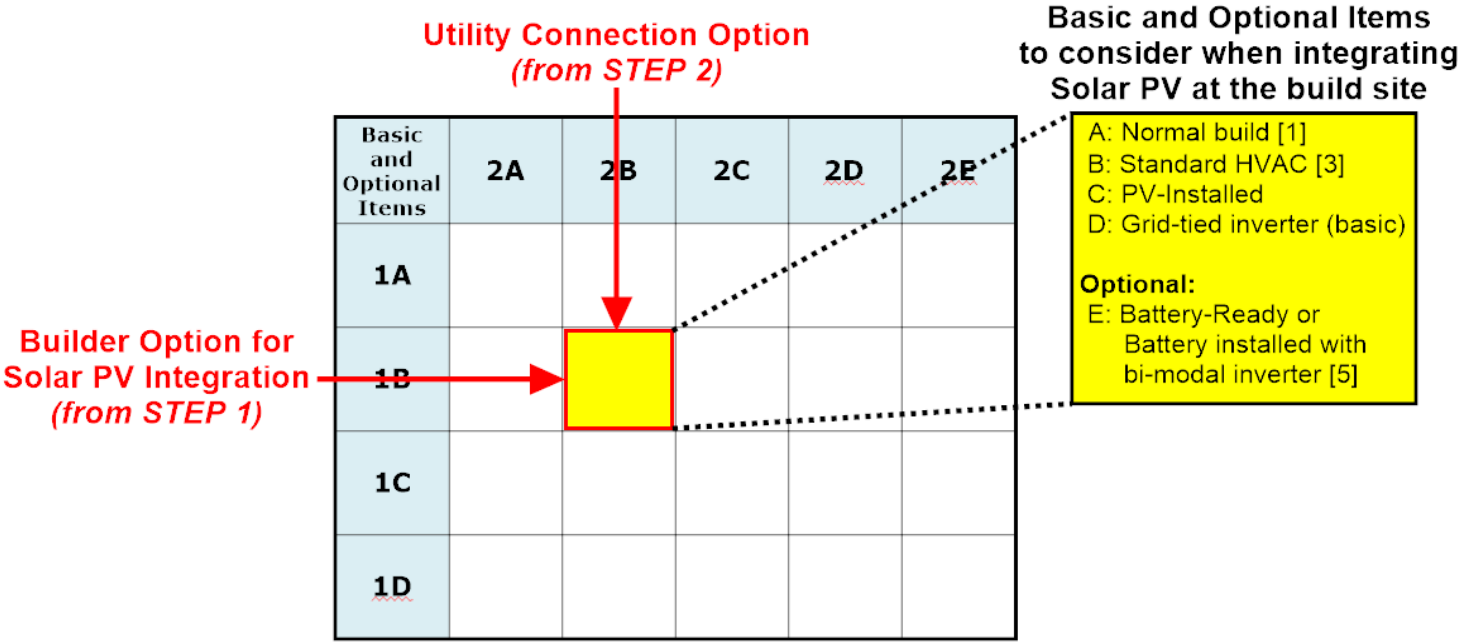
Solar Site Assessment and Modeling

External shading negligible throughout year.

Essentially 100% Annual Solar Access



Step 3: Confirm Solar PV Integration Design Requirements (Planning Matrix)



Basic and Optional Design Requirements		Electrical Utility Grid Connection Option (from STEP 2)				
		2A: Feed-In-Tariff Connection	2B: Net-metering or Net-billing Connection	2C: Net-Zero Electric Connection	2D: Self Use Only Connection	2E: No Grid Connection Available [6]
Builder's Preferred Option for Solar PV Integration (from STEP 1)	1A: Solar-Ready Home	A: Normal build [1] B: Standard HVAC [3] C: PV-Ready D: No Inverter E: No Battery	A: Normal build [1] B: Standard HVAC [3] C: PV-Ready D: No Inverter **Optional:** E: Battery-Ready	A: Normal build [1] B: Standard HVAC [3] C: PV-Ready D: No Inverter **Optional:** E: Battery-Ready	A: Normal build [1] B: Standard HVAC [3] C: PV-Ready D: No Inverter E: Battery-Ready	A: Normal [1] or enhanced build [2] B: Standard [3], enhanced [2] or all-electric HVAC [4] C: PV-Ready D: Off-grid inverter-charger E: Battery-installed
	1B: Solar Equipped Home	A: Normal build [1] B: Standard HVAC [3] C: PV-Installed D: Grid-tied inverter E: No Battery	A: Normal build [1] B: Standard HVAC [3] C: PV-Installed D: Grid-tied inverter **Optional:** E: Battery-Ready or Battery installed with bi-modal inverter [5]	A: Normal build [1] B: Standard HVAC [3] C: PV-Installed D: Grid-tied inverter **Optional:** E: Battery-Ready or Battery installed with bi-modal inverter [5]	A: Normal build [1] B: Standard HVAC [3] C: PV-Installed D: Grid-tied inverter with self-use controller E: Battery installed **Optional:** E: Bi-modal inverter [5]	A: Normal [1] or enhanced build [2] B: Standard [3], enhanced [2] or all-electric HVAC [4] C: PV-Installed D: Off-grid inverter-charger E: Battery-installed
	1C: Net-Zero-Ready Home	A: Enhanced build [2] B: Enhanced HVAC [2] C: PV-Ready D: No inverter E: No Battery	A: Enhanced build [2] B: Enhanced HVAC [2] C: PV-Ready D: No Inverter **Optional:** E: Battery-Ready	A: Enhanced build [2] B: All-electric HVAC [4] C: PV-Ready D: No Inverter **Optional:** E: Battery-Ready	A: Enhanced build [2] B: Enhanced HVAC [2] C: PV-Ready D: No Inverter E: Battery-Ready	A: Enhanced build [2] B: Enhanced HVAC [2] C: PV-Ready D: Off-grid inverter-charger E: Battery-installed
	1D: Net-Zero Energy Home	A: Enhanced build [2] B: Enhanced HVAC [2] C: PV-Installed D: Grid-tied inverter E: No Battery	A: Enhanced build [2] B: Enhanced HVAC [2] C: PV-Installed D: Grid-tied inverter (basic) **Optional:** E: Battery-Ready or Battery installed with bi-modal inverter [5]	A: Enhanced build [2] B: All-electric HVAC [4] C: PV-Installed D: Grid-tied inverter (basic) **Optional:** E: Battery-Ready or Battery installed with bi-modal inverter [5]	**DIFFICULT TO ACHIEVE** Consider Option 1B: **Solar-Equipped Home**, with energy-efficiency upgrades [2] as an alternative	**DIFFICULT TO ACHIEVE** Consider Option 1B: **Solar-Equipped Home**, with energy-efficiency upgrades [2] as an alternative

APPENDIX B: Solar PV System Integration Worksheet

PART I: Pre-Design Considerations

Integrated Design Team:

Builder: Sonbuilt Custom Homes **Energy Advisor:** Capital Home Energy

PV Designer: Riverside Energy Systems **Other trades:** _____

STEP 1: Builder's Preferred Goal for Solar PV *(circle one)*

- Option 1A: PV Ready Home
- Option 1B: PV Equipped Home
- Option 1C: Net-Zero Ready (NZr) Home
- Option 1D: Net Zero (NZ) Energy Home

STEP 2: Utility Connection Options and Constraints at the Build Site *(circle one and provide details)*

- Option 2A: Feed-in-Tariff (FIT)
- Option 2B: Net-Metering / Net Billing
- Option 2C: Net-Zero Electric
- Option 2D: Self-Use Only
- Option 2E: No Grid Connection Available

Maximum PV Array capacity allowed for grid connection: 100 kW_{peak}

Maximum PV Energy Production allowed for grid connection: NA kWh/y

STEP 3: Confirm Solar PV Integration Design Requirements

Confirm general design requirements with Integrated Design Team using the STEP 1 & 2 decisions together with the provided **"Planning Matrix"** to secure Builder approval to proceed with the detailed design.

A. **Building Envelope:** Normal build / envelope upgrades *(circle one)*

B. **HVAC mechanicals:** Standard equipment / enhanced efficiency / all-electric *(circle all that apply)*

C. **PV Integration:** PV-Ready installation / Full PV Installation 3.1 kWp

D. **Battery Integration:** Battery not required / Battery-Ready / Full battery installation *(circle one)*

E. **PV Inverter Type:** Inverter not required / Grid-tied inverter / Bi-modal inverter *(circle one)*

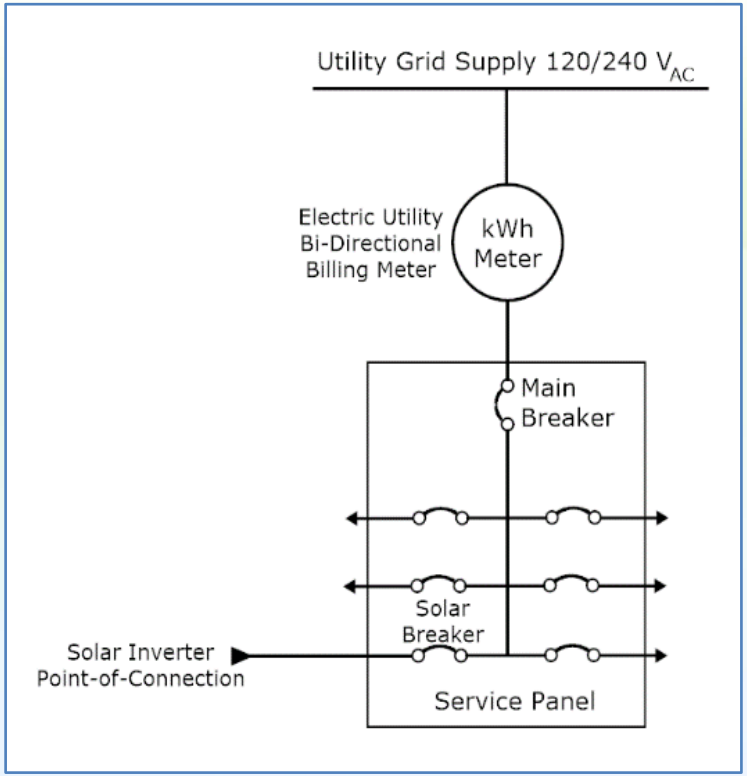
Step 4: Annual PV Energy Production Target

- Annual Energy Offset Target: per EA modelling for NZe = **9000 kWh/yr**
- South facing roof capacity required ≈ **9 kWp**
- Projected PV Energy Production for 3.1 kWp Solar Equipped System: ≈ **3350 kWh/year**
- Solar PV targets **35-37%** of annual electricity use.

Step 5: Solar PV Array Location and Size

- Option 5A: House-roof mounted arrays
- Option 5B: Adjacent structure mounted arrays
- Option 5C: Mounting on walls or railings
- Option 5D: Ground mounted arrays

Step 6: Electrical Impacts and Point-of-Connection



- 3.1 kWp system easily accommodated by 200A main service panel bus capacity.
- Solar PV P-O-C via 20A 2-P solar CB in main service panel

Step 7: Structural Impacts and PV Attachment

Option 7A: Flashed anchors secured into roof sub-structure

Option 7B: Flashed anchors secured into roof decking

Option 7C: Standing seam metal roof clamps

Option 7D: Ballasted systems on flat roofs

APPENDIX B: Solar PV System Integration Worksheet

PART II: Solar PV Integration Design Requirements

STEP 4: Define Annual PV Energy Production Target *(circle one option and provide details)*

- Option 4A: No Specified Energy Target (Max. solar array area available: _____ ft^2 or m^2)
- Option 4B: Partial energy offset Target (Nominal PV energy target: 3350 kWh/y)
- Option 4C: Net-Zero Energy Usage (Nominal PV target: _____ kWh/y)

Solar photography completed to measure solar access scores and shading constraints at site: Yes / No

Measured annual solar access score: 100 %. Summer: 100 %. Winter: 99 %.

STEP 5: Define PV Array Location(s) and Size(s) *(circle all options that apply and provide details)*

- Option 5A: House-roof mounted (array area available: 220 ft^2 or m^2) South roof per dormer removal
- Option 5B: Adjacent-structure, specify: _____ (array area available: _____ ft^2 or m^2)
- Option 5C: Ground-mounted (array area available: _____ ft^2 or m^2)
- Solar Access and Shading Assessment for the preferred array location(s):
  - Estimated PV Energy Production: 3350 kWh/y)
  - Shading *(circle all that apply):* External-shading: Yes / No ; Self-shading: Yes / No
    Minor from gables

STEP 6: Define Electrical Requirements for Solar PV *(circle one option and provide details)*

- Option 6A: Feed-in-Tariff (FIT) circuit breaker (C/B rating: _____ A)
- Option 6B: Main-panel circuit breaker (C/B rating: 20 A);
  specify main panel bus-bar rating: 200 A
- Option 6C: Service Splitter with solar disconnect (solar C/B rating: _____ A)

Other components: *(circle all that apply)*

- Battery Storage Required: yes / no
- Self-Use Controller Required: yes / no
- Bi-modal Inverter/Charger required: yes / no

STEP 7: Structural Impacts and preferred PV Attachment Method

Structural impacts assessed and recommended attachment method defined: No / Yes *(circle one)*

If No, arrange for structural review with input from the PV consultant.

If Yes, indicate type of assessment: Professional structural assurances provided: Yes / No *(circle one)*

Truss manufacturer assurances provided: Yes / Solar Ready Trusses

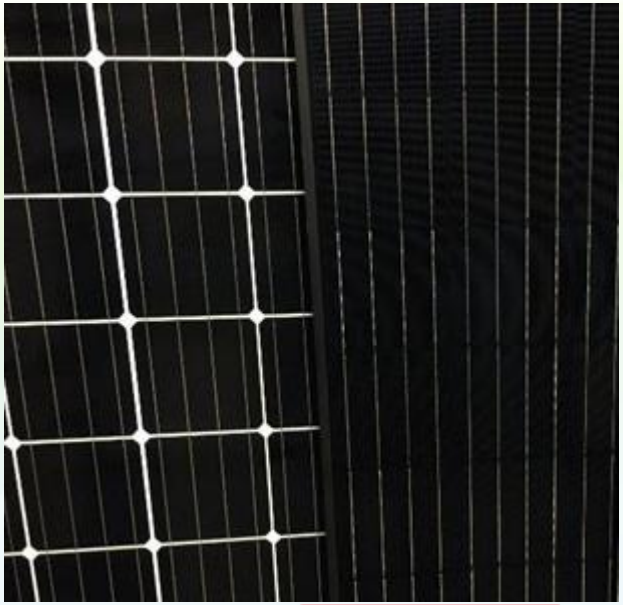
and, select the preferred attachment method: *(circle one option or sub-option)*

- Option 7A: Flashed anchors secured into roof sub-structure: *(select one sub-option)*
  (i) J or U-bolts; (ii) Lag-bolts into blocking; (iii) Lag-bolts into scabs; (iv) Lag bolts into top-chords*
- Option 7B: Flashed anchors secured into roof decking
- Option 7C: Standing seam metal roof clamps
- Option 7D: Ballasted systems *(only suitable on roofs with less than 7-degrees of slope)*
- Other method _____ *(specify)*

*** WARNING: DIRECT LAGGING INTO ROOF-TRUSS TOP CHORDS IS NOT RECOMMENDED BY TPIC**

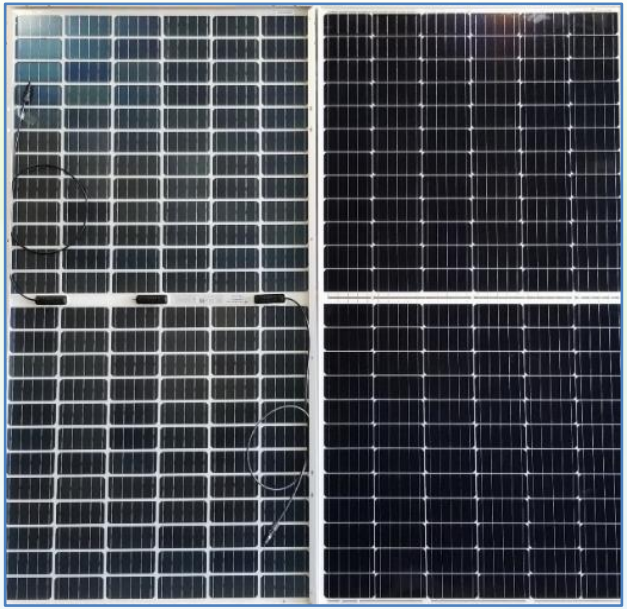
Step 8: Preferred Solar Module Technology

8A
Poly-Si



8B
Mono-Si

8C
Mono-Si
All-Black



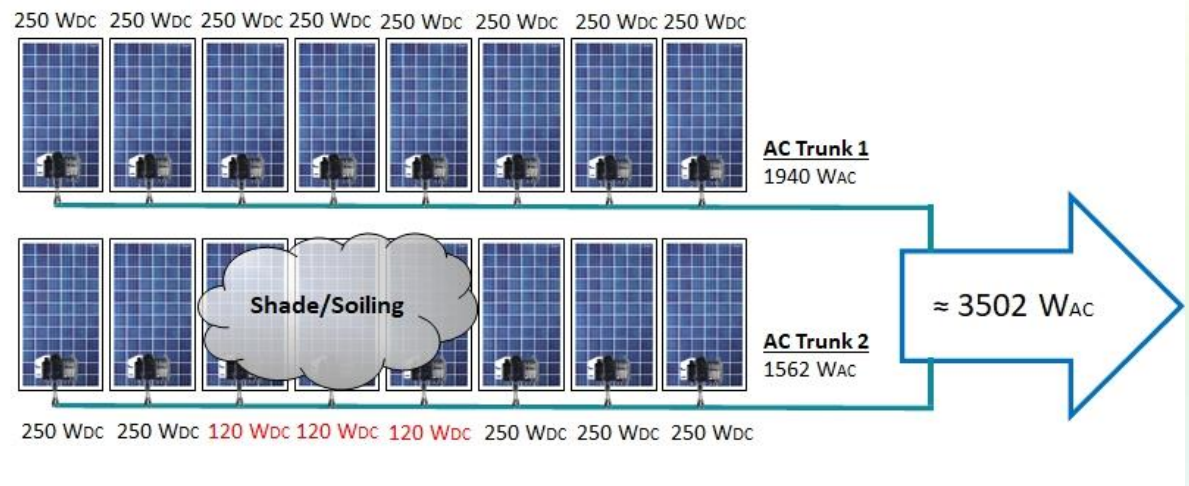
8D Mono-Si
Bi-Facial

Step 9: Preferred Solar Inverter Technology

Converts DC power to AC power

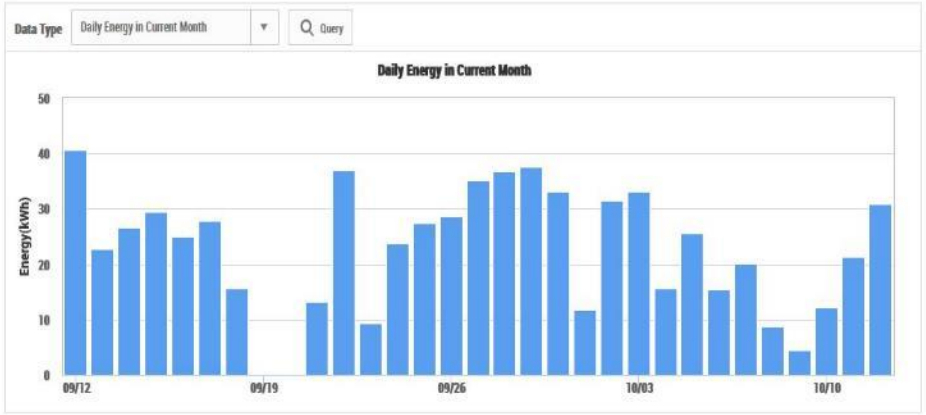
- String Inverter
- Optimized String Inverter
- Micro-Inverter
- Bi-Modal Inverter – battery based systems

Step 9: Preferred Solar Inverter Technology



- PV consultant advised using micro-inverters.
  - Cost effective method for smaller PV systems
  - Shade tolerant, easily expandable
  - Provides module level monitoring.

Step 10: Energy Monitoring Technology



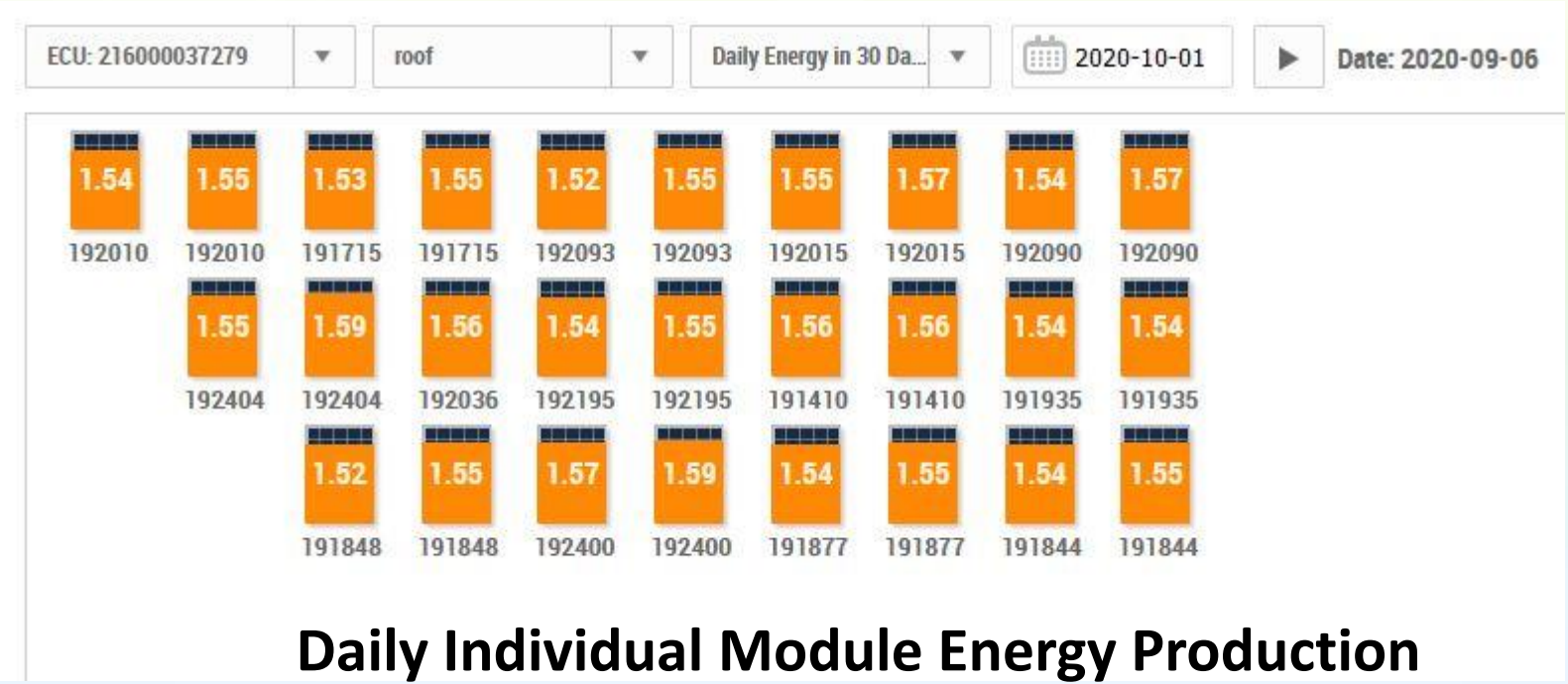
Status	ECU ID	Today Energy (kWh)	Current Power (w)	Action
	216000037279	30.99	503	Detail Status

Status	ECU ID	Today Energy (kWh)	Current Power (w)	Action
	216000037279	30.99	503	Detail Status

Daily System Energy Production

Daily System Power Output

Step 10: Energy Monitoring Technology



Daily Individual Module Energy Production

APPENDIX B: Solar PV System Integration Worksheet

PART III: Preferred Solar Components & Monitoring

STEP 8: Preferred Solar Module Technology *(select one)*

- Option 8A: Polycrystalline-Cell Modules
- Option 8B: Monocrystalline-Cell Modules (basic)
- Option 8C: Monocrystalline-Cell, All black Modules
- Option 8D: Monocrystalline-Cell, Bi-facial Modules
- Other requirements _____ *(specify)*

STEP 9: Preferred Inverter Technology *(select one)*

- Option 9A: String Inverter
- Option 9B: Optimized-String Inverter
- Option 9C: Micro-Inverter
- Option 9D: Bi-Modal Inverter
- Other requirements _____ *(specify)*

STEP 10: Preferred Energy Monitoring Approach *(Required for NZ homes; optional for others)*

- Option 10A: Monitoring not installed
- Option 10B: Basic Net-Zero Home monitoring
- Option 10C: Advanced energy monitoring of the home
- Other requirements _____ *(specify)*

PV Installation Specifications

1. 3.1 kWp Solar PV Array (minimum)
    - 10 x 310Wp (min) XXXX All-Black 60 cell mono modules or approved equivalent
    - South roof flush mounted per IFC drawings using Al solar PV racking (XXXX or approved equivalent) and SS fasteners.
    - Flashed anchors (XXXX or approved equivalent) attached as per IFC drawings solar PV attachment structural notes.
2. Micro-Inverter System
    - XXXX model XXXX micro-inverters (or approved equivalent), 1 per pair of solar modules
    - Brand specific trunk cables, AC combining panel, and lockable DG disconnection means.
    - Brand specific system monitoring gateway, with web-based monitoring portal providing monitoring granularity to the module level

Hand Off to Construction

- Show solar PV clearly on IDP and IFC drawings
- Ensure service providers are aware how their contributions are affected by and impact solar PV.
- Meetings with site supervisors.
- Adjust construction schedule to integrate solar installation steps.

Thank you!

Please discuss with us…

1. Comments and questions.
2. How can we further encourage use of the guide?
3. Finding support with using the guide.

https://www.nrcan.gc.ca/energy-efficiency/energy-efficiency-homes/local-energy-efficiency-partners/leep-technology-guides/17346

Our next webinar

BASF
We create chemistry

Register:
chba.ca/NZwebinars

Feb 25 from 1:30-2:30 ET
Discover the New Generation of Spray Foam

Presented by Chris Janzen, Field Applications and Warranties Manager, PM North America, BASF Canada

Building codes, product standards, and regulatory requirements are changing for spray foam. This webinar will examine the latest industry updates and how this impacts your projects. Join us to learn how spray foam's innovative applications can make your upcoming project code compliant, energy efficient and green.

Join the webinar to:

- Gain knowledge on the new generation of spray foam using HFO blowing agents
- Learn about the steps required for your upcoming new build project
- Ensure you're using a certified installer to be code compliant
- Uncover new applications of spray foam including WALLTITE CM01 as a radon barrier

Chris Janzen has been with BASF Canada for over 19 years covering various aspects of technical support, product development, market development, and customer training for the spray polyurethane foam business. His experience has brought him exposure to residential, commercial, and roofing applications in Canada and abroad. He has recently taken on the role as Field Application & Warranty Manager for BASF in North America and is co-chair for the Spray Foam Coalition's Canada Work Group.

netzero home
The ultimate in comfort and efficiency

Contact the CHBA Net Zero Team

Brett Cass
Coordinator
Net Zero Home Labelling Program
613.230.3060 x233
brett.cass@chba.ca

Marie Hanchet
Project Manager
Net Zero Energy Housing
613.230.3060 x263
marie.hanchet@chba.ca

Sonja Winkelmann
Director
Net Zero Energy Housing
613.230.3060 x235
sonja.winkelmann@chba.ca

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These consultants would like to help you trial the new NRCan PV Decision Guide

The consultants listed below expressed interest in helping builders use the *Planning and Decision Guide for Solar PV Systems* to develop solar designs for their homes. They found out about the guide through a web meeting organized by Canadian Renewable Energy Association (CanREA) and have each offered their support to builders in using the guide's Solar PV System Integration Worksheet (Appendix B) to document key decisions as part of their designs.

IMPORTANT NOTE: *The consultants on this list have self-identified. They have not been pre-qualified by the CHBA. The CHBA Net Zero Council is exploring ways to qualify PV professionals so that builders and renovators can more easily find PV professionals that meet minimum skill and experience thresholds.*

CanREA: https://renewablesassociation.ca/

Guide: https://www.nrcan.gc.ca/energy-efficiency/energy-efficiency-homes/local-energy-efficiency-partners/leep-technology-guides/17346

Company	Contact	Email	Phone	Region
Sunly Energy Corp.	Shamor Paul	shamor@sunly.ca	416-786-1692	Charlottetown, PEI
Novatec Solar	Justin Burns	justin.burns@novatecsolar.ca	506-230-3854	Dartmouth, NS
Skylit Energy Solutions	Amanda Brulé	abrule@skylit.ca	902-812-1050	Kentville, NS
Execon Roofing and Solar	Chris Meechan	chris@execonconstruction.com	613-868-7047	Ottawa, ON
Bluewater Energy	Wil Beardmore	wbeardmore@bluewaterenergy.ca	519-827-7348	Guelph, On
HES PV Ltd.	Daniel Partridge	projects@hespv.ca	1-866-258-0110	ON, AB, BC
Rock paper sun Ltd.	Phil Foster	phil@rockpapersun.com	306-880-2700	Saskatoon, SK
Evolsolar	Paul Heebner	paul.heebner@evolsolar.com	306-640-2429	Regina, SK
Go Solar Sask Ltd.	Kyle Parker	kyle@gosolarsask.ca	306-537-9515	Lumsden, SK
Solar Optix Energy Services	Jacquie Nordquist	jacquie@solaroptix.ca	587-691-1432	Lethbridge, AB
Empower Energy Corp.	Jim Jacobsen	jim@empowerenergy.ca	250-254-2555	Creston, BC
Riverside Energy Systems	Ben Giudici	ben@riversideenergy.ca	778-220-2496	Kamloops, BC
Fast-Rack	Richard Fex	project@fast-rack.ca	250-999-5830	Victoria, BC