

COMMONWEALTH OF MASSACHUSETTS

Charles D. Baker, Governor

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**Solar Massachusetts Renewable Target
(SMART)
Program Transition and Launch**

October 31, 2018

Agenda

- SREC II Transition
- Differences between SREC II and SMART
- DPU Order Details
- SMART Application Process
- Other Information

SREC II Transition

- Pursuant to its authority under both the RPS Class I and SMART regulations, DOER has established **November 26, 2018** as the transition date from the SREC II Program to the SMART Program
- This date will mark the opening of the SMART Program with respect to the intake of Statement of Qualification Applications from prospective applicants
- This date also marks the end of the SREC II Program, and triggers a number of requirements for facilities seeking qualification under the SREC II Program

SREC II Transition

November 26, 2018

- SREC II Ends
 - Systems sized 25 kW DC or less
 - Must be operational on or before November 26, 2018 in order to qualify
 - Must submit an application to DOER by February 15, 2019
 - Application must include documentation that they were authorized to interconnect on or before November 26, 2018
 - Systems larger than 25 kW DC
 - Must submit an application to DOER and be mechanically complete by November 26, 2018
 - Must submit proof of mechanical completion to DOER.SREC@mass.gov by December 10, 2018
 - Acceptable documentation includes
 - Certificate of Completion signed by wiring inspector
 - Evidence that a wiring inspection has been scheduled soon after November 26, 2018
 - An affidavit signed by the Engineer of Record

SMART Initial Application Period

November 26, 2018

- SMART Application Portal Opens
 - 12:00 PM ET the portal will open and the initial application period will begin, which will last for five business days
 - All applications received through 11:59 PM ET on November 30, 2018 will be considered as having been submitted at the same time for the purposes of determining placement in a Capacity Block
 - Applications for facilities less than or equal to 25 kW AC will be reviewed and placed into Capacity Blocks in the order that their contract was executed
 - Applications for facilities greater than 25 kW AC will be reviewed and placed into Capacity Blocks in the order that their Interconnection Services Agreement was executed
 - All applications received on or after 12:00 AM ET December 1, 2018 will be reviewed and placed into Capacity Blocks on a first come, first served basis

Key Differences Between SREC II and SMART

- SMART regulation requires that installers submit applications on behalf of customers and include such services in the contract with their customer (see 225 CMR 20.06(1)(b)1.):
 - “Contract service must include responsibility for the Statement of Qualification Application process including submittal of authorization to interconnect, securing required permits and engineering approvals, installation of the project, scheduling and participation in all required inspections, and providing warranty services, as required.”
- Application fee required at submittal
 - The EDCs continue to finalize application fee, which will be announced soon
- Two part application process
 - Preliminary Application (pre-interconnection)
 - To reserve a facility’s position in Capacity Block
 - Claim (post-interconnection)
 - To enroll a facility in tariff in order to begin receiving incentive payments
- All applications for facilities sized 25 kW AC or less must include a signed Customer Disclosure Form
 - Different forms for direct owned vs. third-party owned
- All recipients of credits from a Community Shared Solar facility must also sign a Customer Disclosure Form

Key Differences Between SREC II and SMART (continued)

- EDCs will own production meters and will be responsible for collecting data and reporting to NEPOOL GIS (no more PTS reporting requirements)
 - Owner of PV system responsible for paying for meter via the interconnection process
 - Installers must leave open socket for utility owned production meter when designing systems
- EDCs own all Renewable Energy Certificates (RECs) for the duration of the tariff term
 - Customer must sign a REC assignment form acknowledging the EDCs ownership of the RECs before enrolling in tariff
- Taxation of incentive payments
 - EDCs will issue a 1099 to all recipients of incentive payments annually
 - W-9 required as part of application submission

Eversource Capacity Block Consolidation

- Eversource Consolidation
 - DPU directed Eversource to work with DOER to treat Eversource as a single distribution Company and “to work quickly and collaboratively with DOER: (1) to determine the new SMART Program capacity blocks and BCR; and (2) to resolve other issues related to merging NSTAR and WMECo.”
 - After discussions with DOER, Eversource filed the proposed plan:
 1. Remove all references to WMECO from program documents
 2. Propose maintaining the existing Capacity Blocks and Base Compensation Rates for each portion of Eversource’s service territory, referring to them as Eversource East and Eversource West instead of NSTAR and WMECO, respectively

Alternative On-Bill Credit

- Alternative On-bill Credit
 - Approved by DPU
 - Value of bill credit set at basic service rate of the generator
 - Only available to Standalone Solar Tariff Generation Units (i.e. not available to Behind-the-Meter Solar Tariff Generation Units)
 - No limit on the number of credits that can be transferred to customers
 - Credits can be transferred across ISO-NE load zones, but not across utility service territories
 - Credits must be allocated to customer bill within three billing periods
 - EDCs must start tracking delays and misallocations
 - Payment Credit/Transfer form can be updated twice a year until process is automated
 - EDCs expected to take steps toward automation of process

SMART Factor/Cost Recovery

- SMART Factor
 - Separate line item on customer bill
 - Volumetric charge that facilitates EDC recovery of programmatic costs
 - Initially structured as a bypassable charge, but will transition to a non-bypassable charge at some point in 2019 or 2020
 - EDCs must consult with DOER on how the charge will appear on customer's bills as part of their November 1, 2018 SMART Factor filings

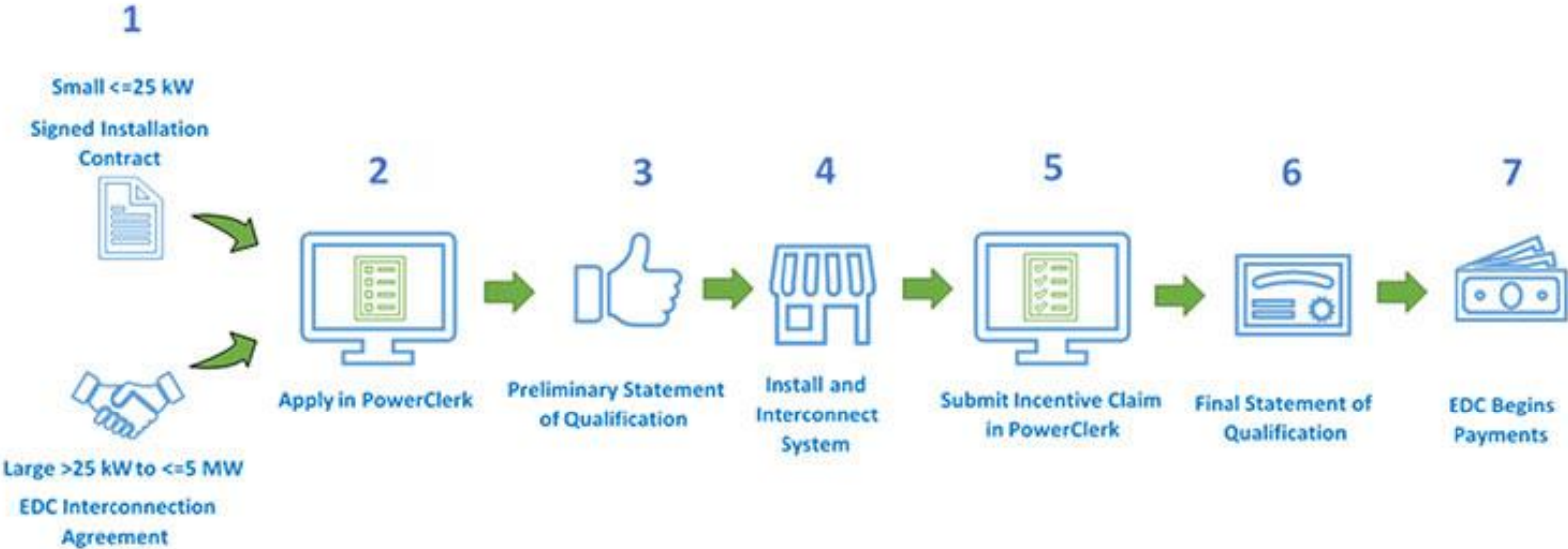
SMART Program Participant Costs

- Application Fee
 - Paid one time upon initial application
 - Must be paid again if applying for supplemental adder eligibility following issuance of Preliminary Statement of Qualification or Final Statement of Qualification:
 - Energy Storage Adder
 - Off-taker Based Adder
- SMART Production Meter(s)
 - Paid for during interconnection application
 - Process may be slightly different for early stage program applicants that already went through the interconnection process before the start of the program
 - Total meter costs paid for by interconnecting customer
 - May be multiple meters if paired with energy storage depending on configuration

SMART Application Webinar

- On **October 24, 2018**, DOER, CLEAResult, and the EDCs hosted a webinar on the SMART Statement of Qualification Application process
- A recording of the webinar can be found [here](#)
- Questions on the webinar should be directed to DOER.SMART@mass.gov or MA.SMART@clearesult.com

Application Process



Application Process

SMART Application

1. Submit application for Preliminary Statement of Qualification to CLEAResult
2. CLEAResult reviews application
 - a) If corrections are needed - Applicant has 10 business to cure
 - b) If not cured in a satisfactory way, Application rejected
3. CLEAResult advises DOER on approval of application
4. DOER issues the Preliminary Statement of Qualification
 - a) Capacity Block and Base Compensation Rate assigned
 - b) 12-month Initial Reservation Period starts
5. If necessary, submit paperwork to obtain Extended Reservation Period
6. Solar Tariff Generation Unit becomes operational
7. Submit application for Claim and final Statement of Qualification
8. CLEAResult advises DOER on approval of application
9. DOER issues the Final Statement of Qualification
 - a) CLEAResult notifies EDC of final approval and Applicant is enrolled in tariff

Capacity Block and Adder Progression

Capacity Blocks

- Assigned on rolling basis
- If a project covers two Capacity Blocks, a unique prorated rate will be assigned
- Capacity that becomes available will be added to current open block

Adder Tranches

- Assigned on rolling basis
- First adder tranche of 80 MW secured based on PV size of project
- If project covers two Adder Tranches, project will fall into tranche with majority of eligible capacity
 - e.g. 600 kW left in Tranche 2, 1 MW project applies and fully qualifies in Tranche 2, Tranche 3 is reduced by 400 kW”

Preliminary Statement of Qualification Application Requirements and Process

Required documentation submitted with initial application

- 25 kW AC and less
 - Turnkey Contract with Installer
 - Customer Disclosure Form
 - Low-income utility rate if applicable
- Over 25 kW AC
 - ISA
 - Site Control
 - Non-ministerial permits
 - Other documentation as necessary if applying for certain adders

Cure period is to correct administrative errors, not to provide extra time to procure required documentation

- If missing documentation provided during the cure period is dated after the original submission date, application will be rejected, and applicant will be required to reapply
 - For example, if an unexecuted ISA is submitted and flagged as an issue that needs to be cured, it is not permissible to subsequently submit an executed version with an execution date after the application submission date. If this were to occur, the application would be rejected.

Adder eligibility

- Some adders have required documentation at preliminary application
- Determination of ineligibility for an Adder does not disqualify eligibility for Base Rate

Claim Application Requirements and Process

1. By Reservation Period Deadline, Applicant must file Claim or file for one of the following Reservation Period Extensions
 - a) Up to 6 month extension for a fee of \$25/kW AC
 - b) Up to 6 month extension for legal challenge to an issued permit
 - c) Indefinite extension if Applicant demonstrates facility is mechanically complete by submitting signed Certificate of Completion
 - d) Good Cause extension - May only seek after obtaining extension for a fee
2. Solar Tariff Generation Unit is issued Authorization to Interconnect by distribution company
3. Applicant submits Claim application via application portal
4. Applicant updates system information with final as-built system specs
 - a) Equipment, size, ownership information all finalized at this point
5. Submit any required information for final Adder eligibility
 - a) e.g. Schedule Z / Payment Credit Transfer Forms, CSS Customer Disclosure Forms, etc.
6. CLEAResult reviews Claim for eligibility
7. CLEAResult recommends to DOER that final SQ be issued
8. DOER reviews and issues final SQ
9. CLEAResult notifies distribution company, and STGU is enrolled in that Company's tariff

Qualification Considerations – Claim Application

Size of Solar Tariff Generation Unit

- Final as built AC size may not exceed AC capacity reserved
- Final as built AC size may be less than AC capacity reserved
- Final as built DC size may exceed DC capacity reserved, so long as AC size is not increased

Tax Documentation

- Tax forms and payment information must be provided for incentive payment recipient during the Claim application process

Incentive Payments

- SMART Effective Date will be set in final Statement of Qualification
 - SMART Effective Date reflects first day production is eligible to receive incentive payments and generate Class I RECS
 - Is generally the same as a project's Commercial Operation Date
- Incentive payments will begin to be paid within three billing cycles of claim approval
- Incentive payments made on a monthly basis, via check or electronic funds transfer
 - Applicant chooses whether to receive check or ACH
- Incentive payments have a 90-day lifespan
 - If recipient of incentive payments changes, information for the new recipient must be provided expeditiously to avoid loss of incentive payments
- Behind-the-Meter Systems
 - Must have confirmation that EDC meter is installed before claim can be approved

Energy Storage Adder

- Final Guideline published in September 2018
- In addition to regulatory requirements, Guideline contains operational requirements
 - Standalone Systems
 - Option #1: The Energy Storage System may fulfill the operational requirements by dispatching the Energy Storage System during the summer peak hours and winter peak hours. Energy Storage System Owners may choose when to cycle during any hours included during this window.
 - Option #2: The Energy Storage System may fulfill the operational requirement through registration in the ISO-NE wholesale market or a retail-level program aimed at reducing ratepayer costs, if deemed satisfactory to the Department.
 - Behind-the-meter Systems
 - Demonstrate that the Energy Storage System reduces on-site customer peak demand or increases self-consumption of on-site generated solar energy.
- Compliance with requirements demonstrated with 15 minute interval data submitted to DOER after first year of operation

Remaining Implementation Steps at DPU

Tariff Approval

- EDCs filed revised model tariff on October 16, 2018
- Revised tariff will reflect changes required by DPU order
- DPU will review revised model tariff and direct EDCs to file company specific compliance tariffs
- Upon approval of the compliance tariffs, EDCs may begin issuing incentive payments

Cost Recovery

- EDCs must file company specific cost recovery filings by November 1, 2018
- Will detail cost estimates and procedures for how SMART Factors will be implemented beginning in 2019
- Will also provide further details on programmatic elements as required by the DPU in its order
- For example, EDCs must work with DOER to determine how SMART Factor will be named and appear on customer bills

400 MW Review

- DOER will conduct a review of the program when 400 MW of preliminary Statements of Qualification have been issued
- Following first week of the SMART Application, CLEAResult will post data regarding how many applications have been submitted
- DOER expects initial review of applications to take several weeks, and expects that the first Statements of Qualification will begin to be issued within a month of initial launch (depending on application volume)
- DOER may amend the SMART Regulation and/or Guidelines as part of its review

Eversource Metering Wiring Diagrams

MA SMART Program Specific

October 2018

SMART Program Specifics

- For more information on the SMART Program please visit www.MASolar.com

Agenda

- Eversource Interconnection Changes for the SMART Program
- Meter Configurations
- Meter Configuration Diagrams

Metering Questions Contacts:

- Eastern MA – Paul Murphy (paul.murphy@eversource.com)
- Western MA - Greg Pivin (greg.pivin@eversource.com)

Interconnection Process

Remaining the Same

- Requests for meters are made to the DG Interconnections team
 - Eversource will install and support all Revenue and Production meters
 - Eversource will provide a PTO upon successful connection

Changes for the SMART Program

- DG will ask for your intention to participate within SMART Program
- For Behind the Meter Installations (BTM)
 - Customer will be charged the cost of BTM Production Meter and installation fees upon submission of the SMART Application Fee via the Web Portal
 - Note: for larger, complex systems (additional charges still apply from ES engineering, i.e., CTs', PT's, etc.)
 - Will require customer-installed wiring, and installation of a second meter socket

Meter Configurations

<u>Service Type</u> <u>Type</u>		<u>Project size</u>	<u>Meter</u>
120/240V Single Phase 2S Bridge		Under 60KW	Form
120/208V Single Phase 12S Bridge	(Network)	Under 60KW	Form
120/208V Three Phase 16S Bridge	4-wire	Under 60KW	Form
277/480V Three Phase 16S Bridge	4-wire	Under 60KW	Form
120/240V Single Phase 2S Interval		Over 60KW	Form
120/208V Single Phase 12S Interval	(Network)	Over 60KW	Form
120/208V Three Phase 16S Interval	4-wire	Over 60 KW	Form
277/480V Three Phase 16S Interval	4-wire	Over 60KW	Form
IT Rated Single Phase (secondary CTs/PTs)		Over 400A	Form

Metering Diagrams

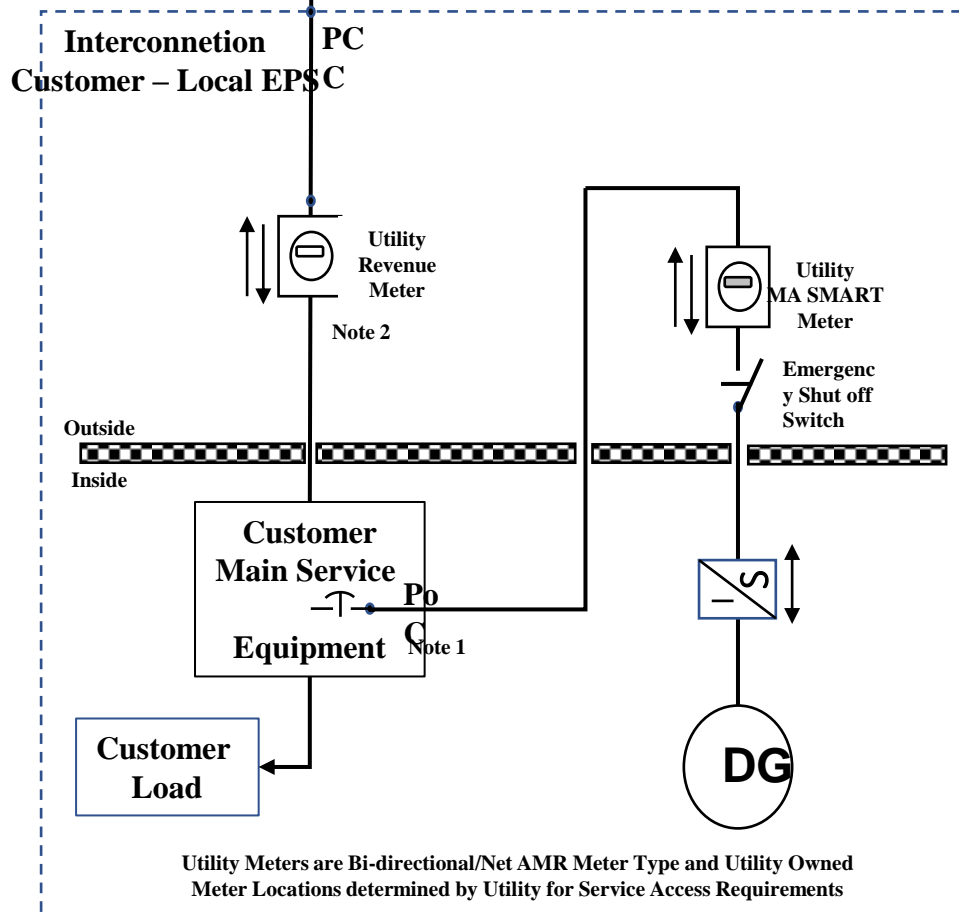
Metering Notes:

- **BTM: Behind the Meter installation option**
- **DER: Distributed Energy Resource**
- **DG: Distributed Generator/Solar Array**
- **ESS: Energy Storage System**
- **EPS: Electric Power System**
- **IC: Interconnecting Customer**
- **PCC: Point of Common Coupling**
- **PoC: Point of Connection**

1a. BTM <60kW

Retail

**Residential/Commercial DG Customer
Behind the Meter Ma SMART <60 kW
With No ESS System
UTILITY – AREA EPS**



This diagram is representative of a standard design. Please contact Eversource for approval, if a different configuration is needed.

Note 1

* Alternative interconnection point ahead of the main breaker, but behind the revenue meter is acceptable.
>>> No connections are to be made within the revenue meter socket. <<<

Note 2

* Where Utility Meter is inside, the interconnecting customer will upgrade the existing service to move the metering location outside together with the Utility MA SMART meter.

Note 3

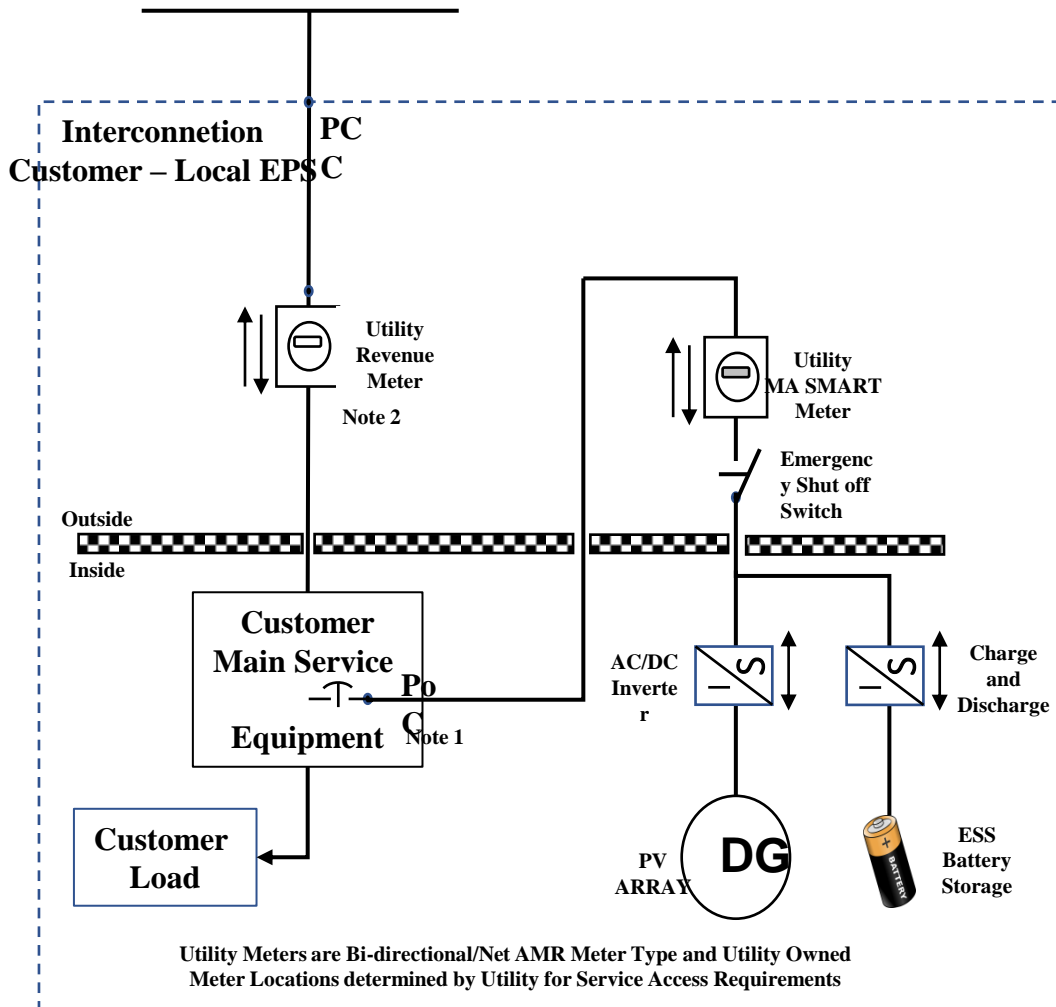
* Utility feed for the MA SMART meter will be connected to the top of the meter socket;
DG will be wired to the bottom of the meter socket.

1b. BTM <60kW

Retail

**Residential/Commercial DG Customer
Behind the Meter Ma SMART <60 kW
With AC coupled ESS System
UTILITY – AREA EPS**

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Note 1

* Alternative interconnection point ahead of the main breaker, but behind the revenue meter is acceptable.
>>> No connections are to be made within the revenue meter socket. <<<

Note 2

* Where Utility Meter is inside, the interconnecting customer will upgrade the existing service to move the metering location outside together with the Utility MA SMART meter.

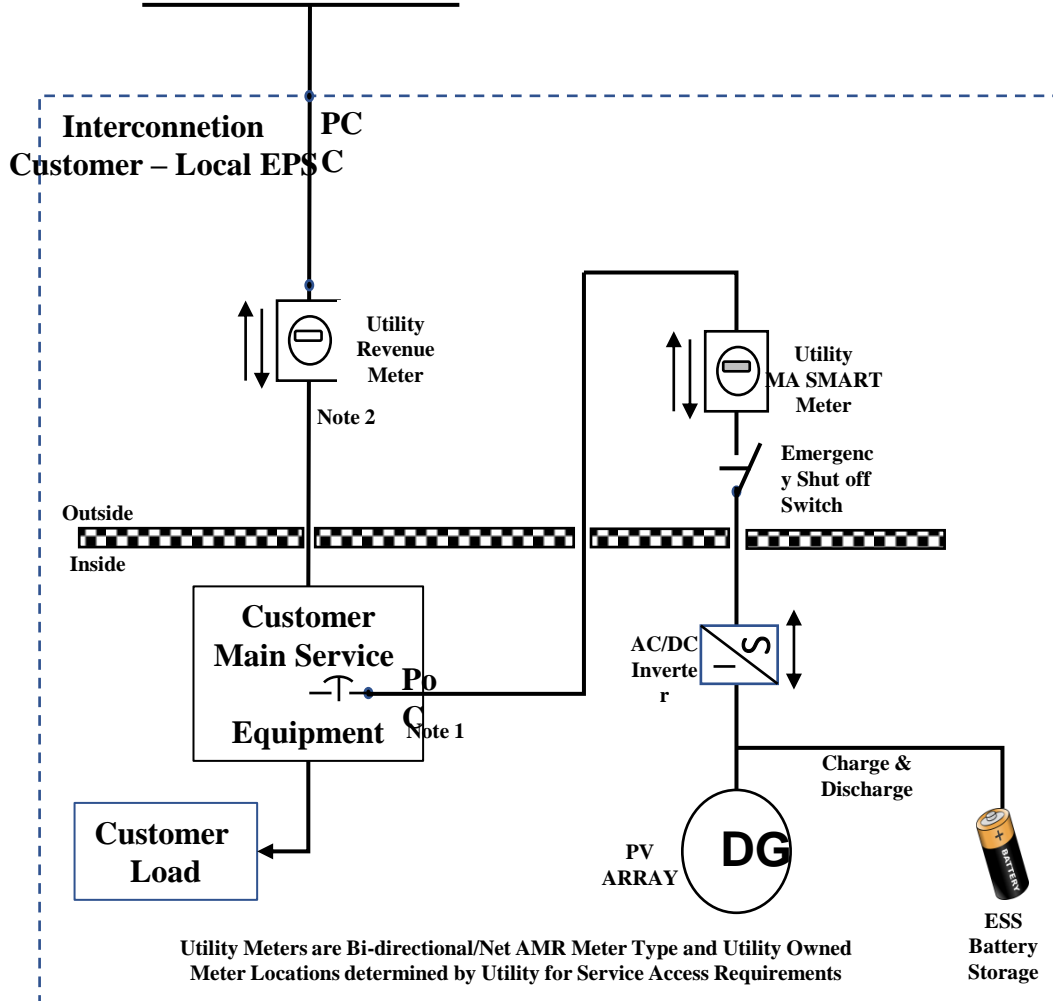
Note 3

* Utility feed for the MA SMART meter will be connected to the top of the meter socket;
DG will be wired to the bottom of the meter socket.

1c. BTM <60kW

Retail

Residential/Commercial DG Customer
Behind the Meter Ma SMART <60 kW
With DC coupled ESS System
UTILITY – AREA EPS

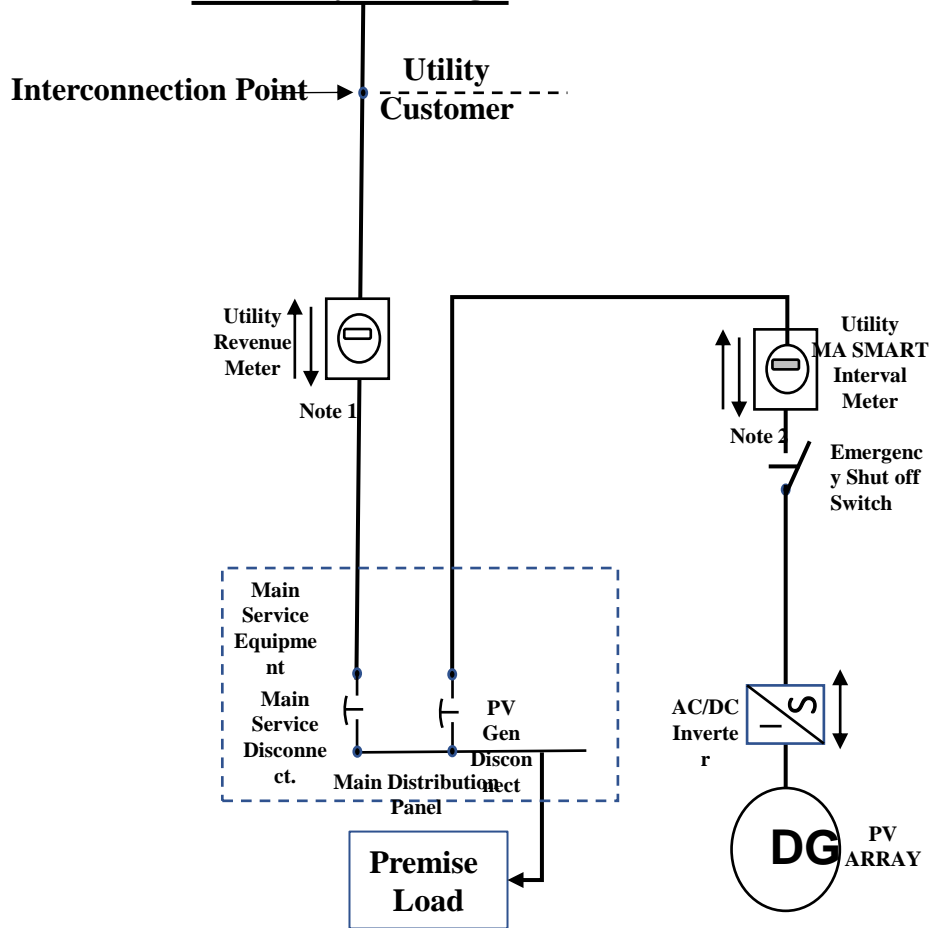


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- Note 1
* Alternative interconnection point ahead of the main breaker, but behind the revenue meter is acceptable.
>>> No connections are to be made within the revenue meter socket. <<<
- Note 2
* Where Utility Meter is inside, the interconnecting customer will upgrade the existing service to move the metering location outside together with the Utility Ma SMART meter.
- Note 3
* Utility feed for the MA SMART meter will be connected to the top of the meter socket;
DG will be wired to the bottom of the meter socket.

2a. BTM >60kW to 500kW

AC Connection to Utility EPS 60kW – 500kW
Behind the Meter Ma SMART
Without ESS System
Utility Service Connection
3-Phase 4-Wire System
Secondary Metering



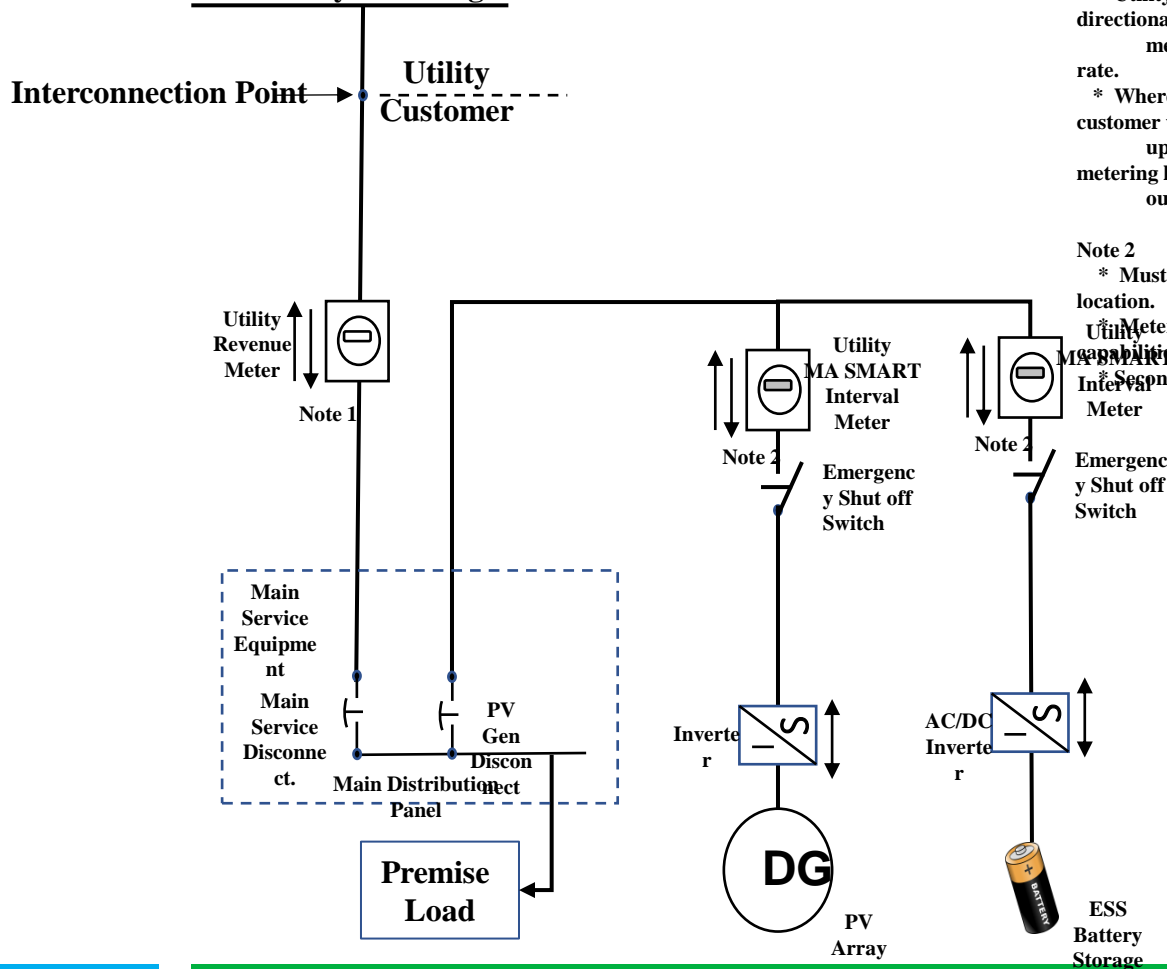
This diagram is representative of a standard design. Please contact Eversource for approval, if a different configuration is needed.

- Note 1
- * Utility Revenue Meter installed will be Bi-directional/NET/Recording meter and meet the requirements of the billing rate.
 - * Where Utility Meter is inside, the interconnecting customer will upgrade the existing service to move the metering location outside with the Utility Ma SMART meter.
- Note 2
- * Must have a Cellular connection at Meter location.
 - * Meter will have bi-directional interval recording capabilities.
 - * Secondary metering CTs/VTs may be required.

2b. BTM >60kW to 500kW

AC Connection to Utility EPS 60kW – 500kW
 Behind the Meter Ma SMART
 With AC coupled ESS System
 Utility Service Connection
 3-Phase 4-Wire System
 Secondary Metering

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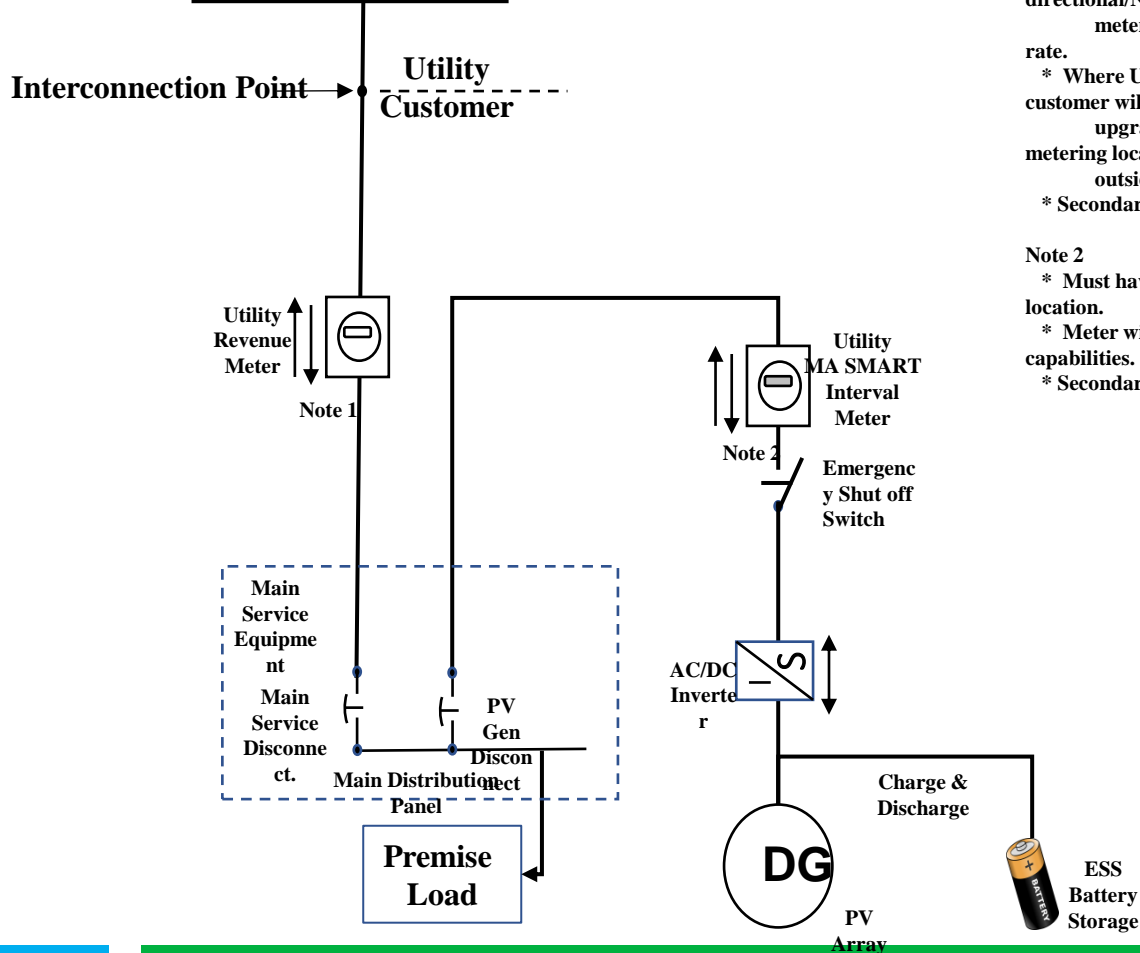


Note 1
 * Utility Revenue Meter installed will be Bi-directional/NET/Recording meter and meet the requirements of the billing rate.
 * Where Utility Meter is inside, the interconnecting customer will upgrade the existing service to move the metering location outside with the Utility Ma SMART meter.

Note 2
 * Must have a Cellular connection at Meter location.
 * Meter will have bi-directional interval recording capabilities.
 * Secondary metering CTs/VTs may be required.

2c. BTM >60kW to 500kW

**AC Connection to Utility EPS 60kW – 500kW
Behind the Meter Ma SMART
With DC coupled ESS System
Utility Service Connection
3-Phase 4-Wire System
Secondary Metering**



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Note 1

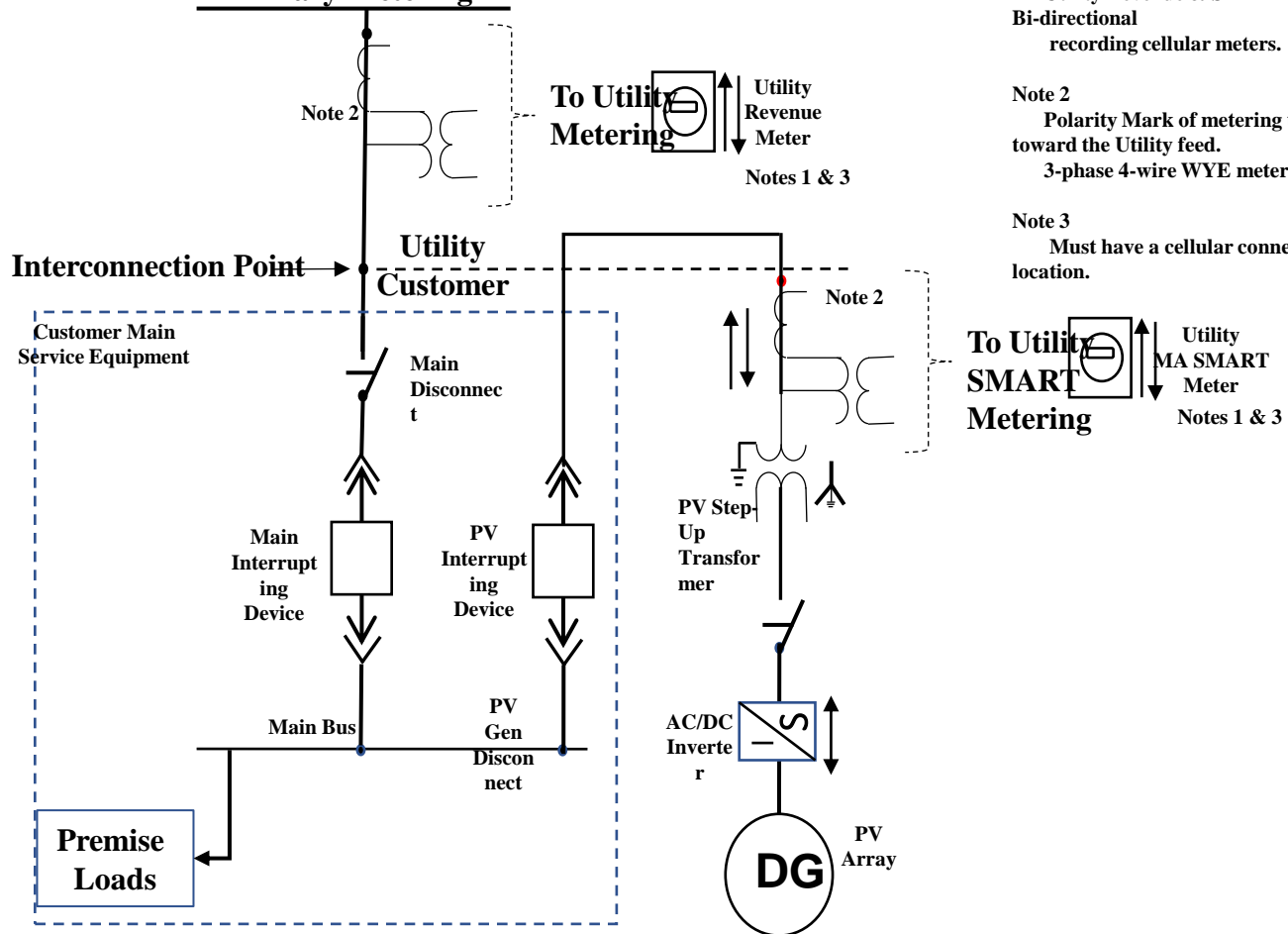
- * Utility Revenue Meter installed will be Bi-directional/NET/Recording meter and meet the requirements of the billing rate.
- * Where Utility Meter is inside, the interconnecting customer will upgrade the existing service to move the metering location outside with the Utility Ma SMART meter.
- * Secondary metering CTs/VTs may be required.

Note 2

- * Must have a Cellular connection at Meter location.
- * Meter will have bi-directional interval recording capabilities.
- * Secondary metering CTs/VTs may be required.

3a. BTM >500kW

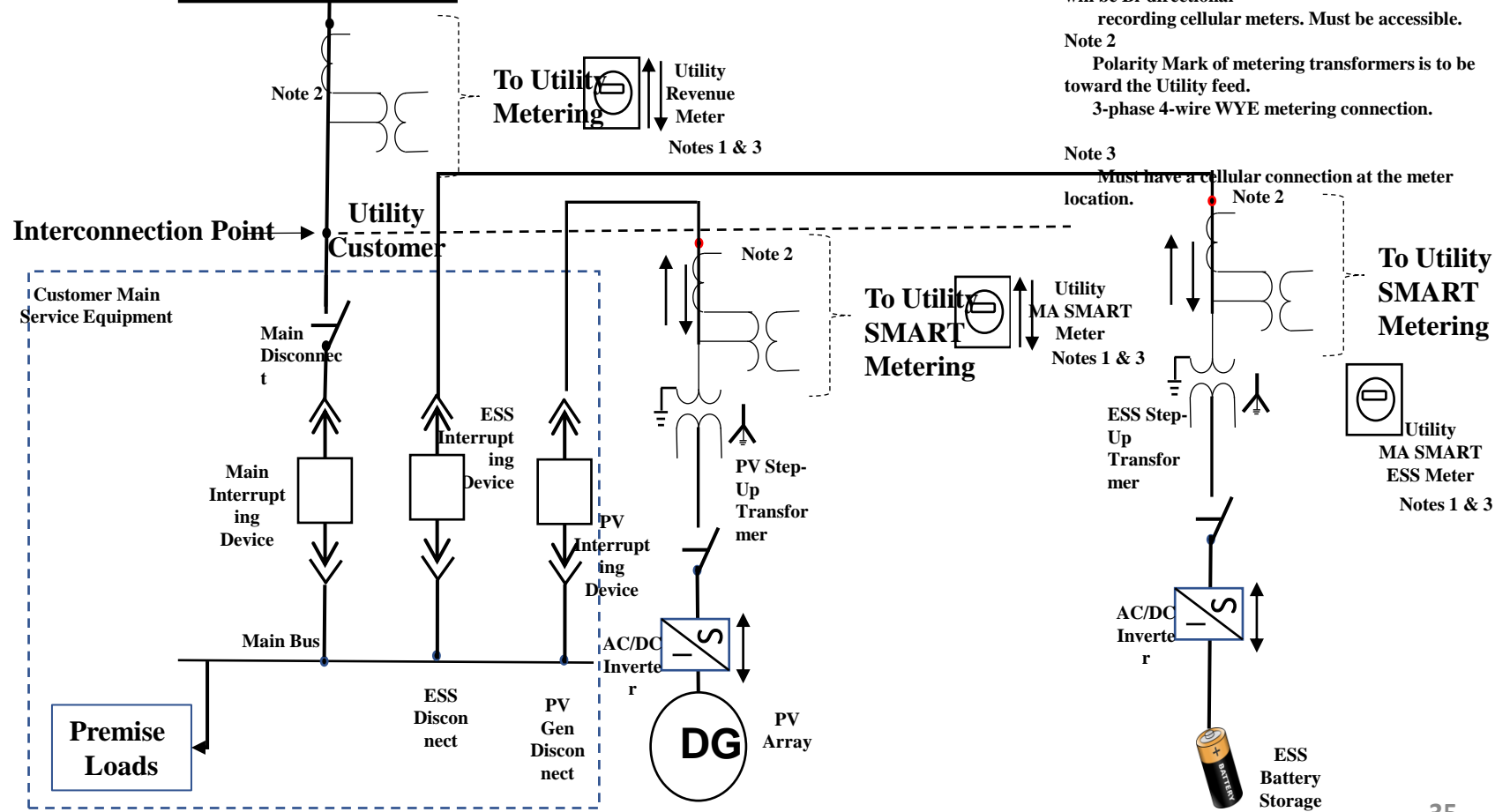
**AC Connection to Utility EPS 500kW and Greater
Behind the Meter Ma SMART
With No ESS System
Utility Service Connection
3-Phase 4-Wire System
Primary Metering**



This diagram is representative of a standard design. Please contact Eversource for approval, if a different configuration is needed.

3b. BTM >500kW

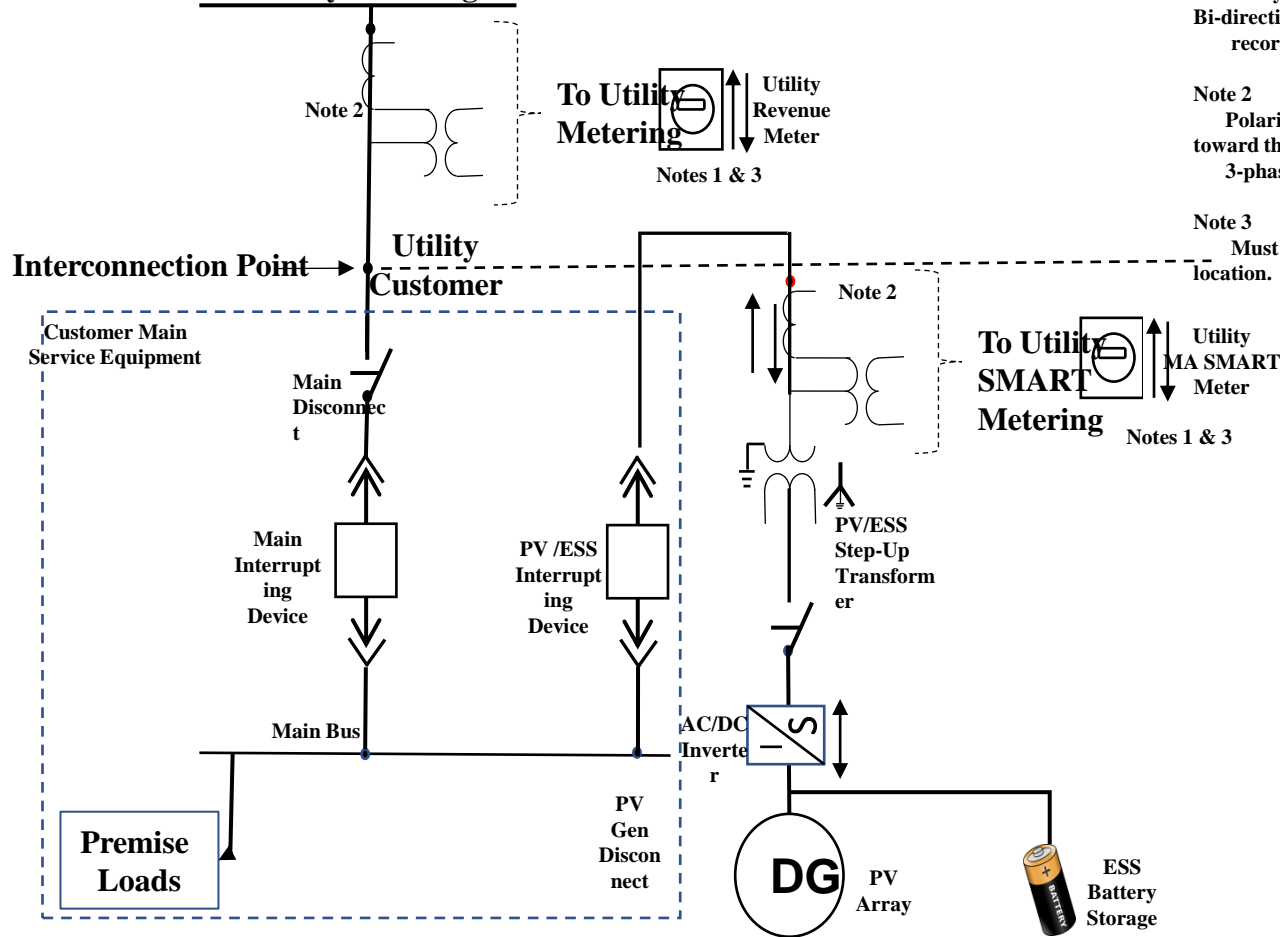
**AC Connection to Utility EPS 500kW and Greater
Behind the Meter Ma SMART
With AC coupled ESS System
UTILITY SERVICE Connection
3-Phase 4-Wire System
Primary Metering**



This diagram is representative of a standard design. Please contact Eversource for approval, if a different configuration is needed.

3c. BTM >500kW

**AC Connection to Utility EPS 500kW and Greater
Behind the Meter Ma SMART
With DC coupled ESS System
UTILITY SERVICE Connection
3-Phase 4-Wire System
Primary Metering**



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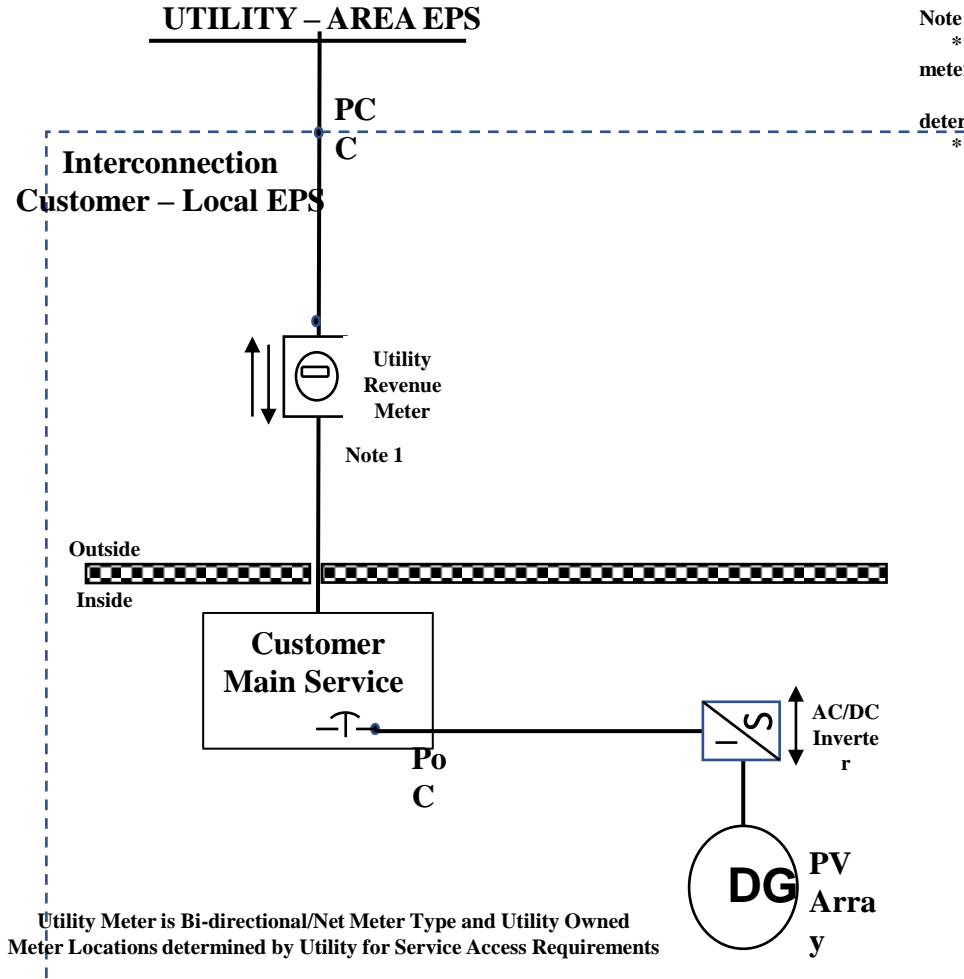
- Note 1**
Utility Revenue & SMART Meters installed will be Bi-directional recording cellular meters. Must be accessible.
- Note 2**
Polarity Mark of metering transformers is to be toward the Utility feed.
3-phase 4-wire WYE metering connection.
- Note 3**
Must have a cellular connection at the meter location.

Stand Alone Wiring Diagrams

4a. Stand Alone <60kW

Retail Residential/Commercial DG Customer
Stand Alone Ma SMART <60 kW
With No ESS System

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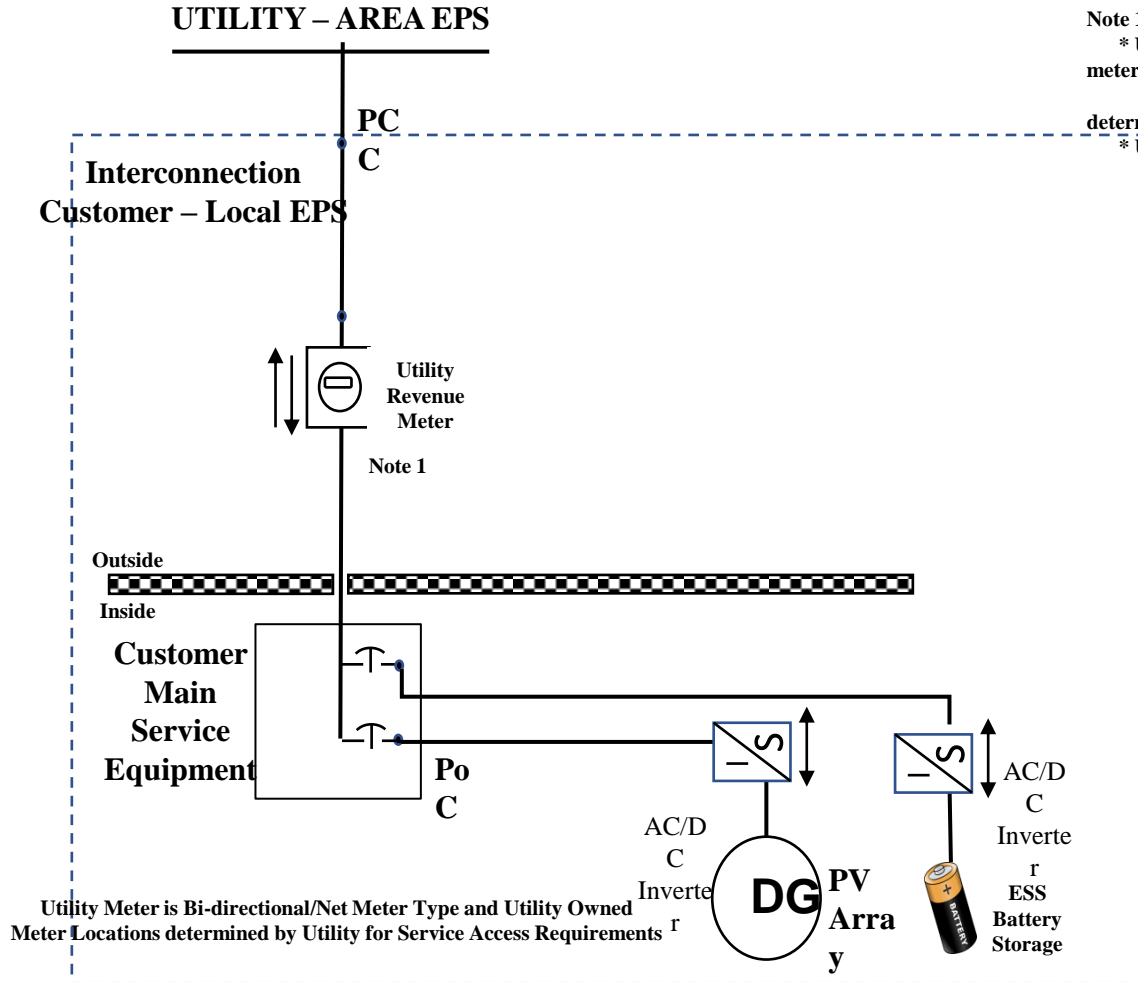
Note 1
 * Utility Meter will be Bidirectional/Net KWH only meter to be used for Utility Revenue and REC determination purposes.
 * Utility meter must be accessible.

Utility Meter is Bi-directional/Net Meter Type and Utility Owned
 Meter Locations determined by Utility for Service Access Requirements

4b. Stand Alone <60kW

Retail Residential/Commercial DG Customer
Stand Alone Ma SMART <60 kW
With AC coupled ESS System

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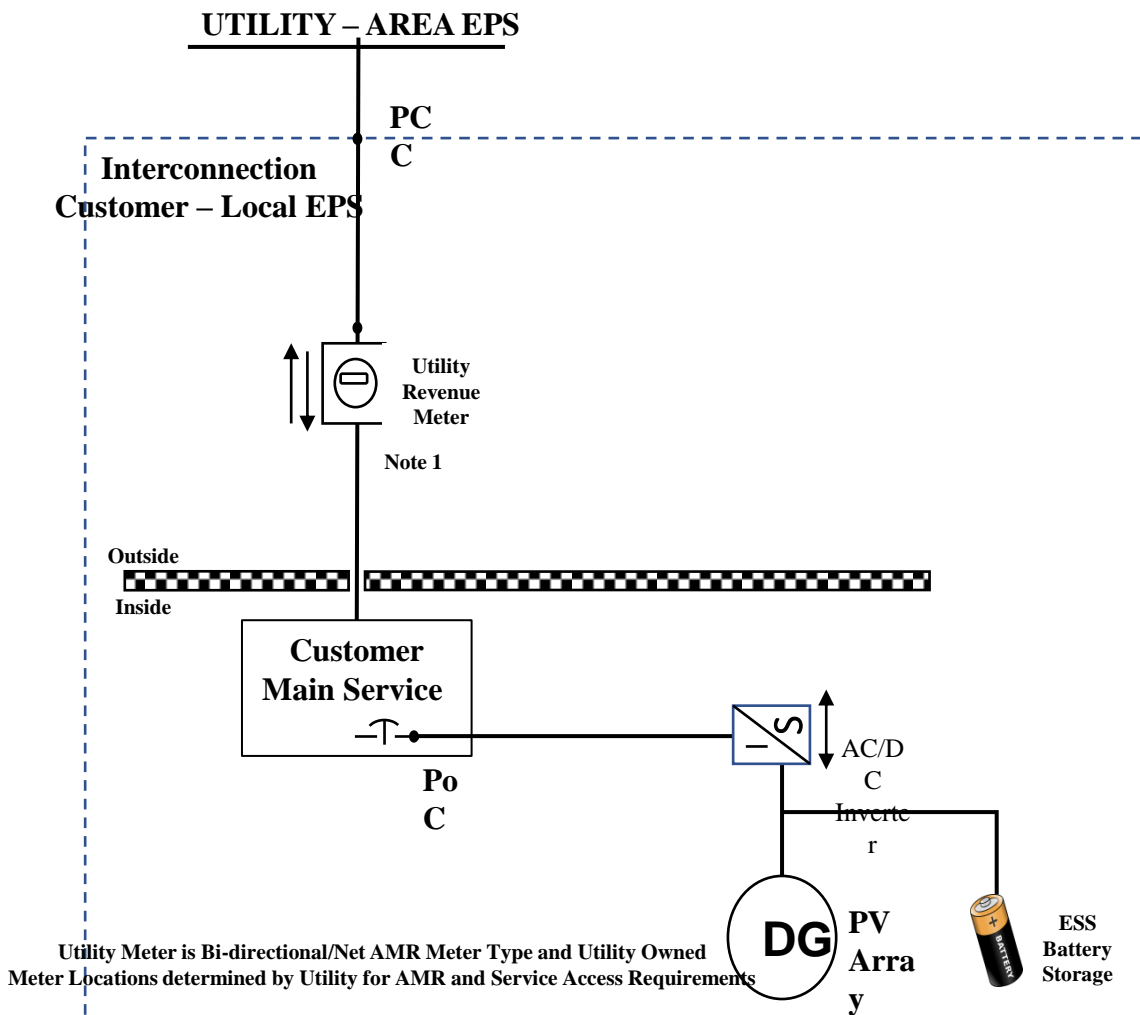


Note 1
* Utility Meter will be Bidirectional/Net KWH only meter to be used for Utility Revenue and REC determination purposes.
* Utility Meter must be accessible.

4c. Stand Alone <60kW

Retail Residential/Commercial DG Customer
Stand Alone Ma SMART <60 kW
With DC coupled ESS System

This diagram is representative of a standard design. Please contact Eversource for approval, if a different configuration is needed.



Note 1

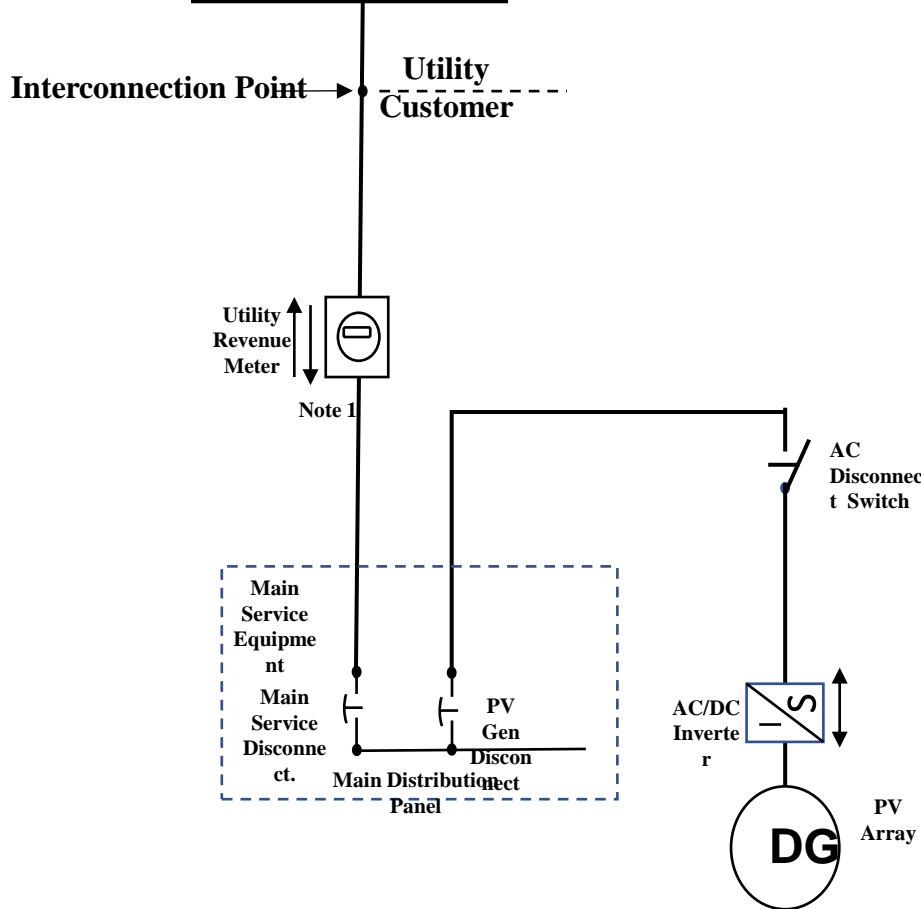
* Utility Meter will be Bidirectional/Net KWH only meter

to be used for Utility Revenue and REC determination purposes.

* Utility Meter must be accessible.

5a. Stand Alone >60kW to 500kW

AC Connection to Utility EPS 60kW – 500kW
Stand Alone Ma SMART
Without ESS System
Utility Service Connection
3-Phase 4-Wire System
Secondary Metering



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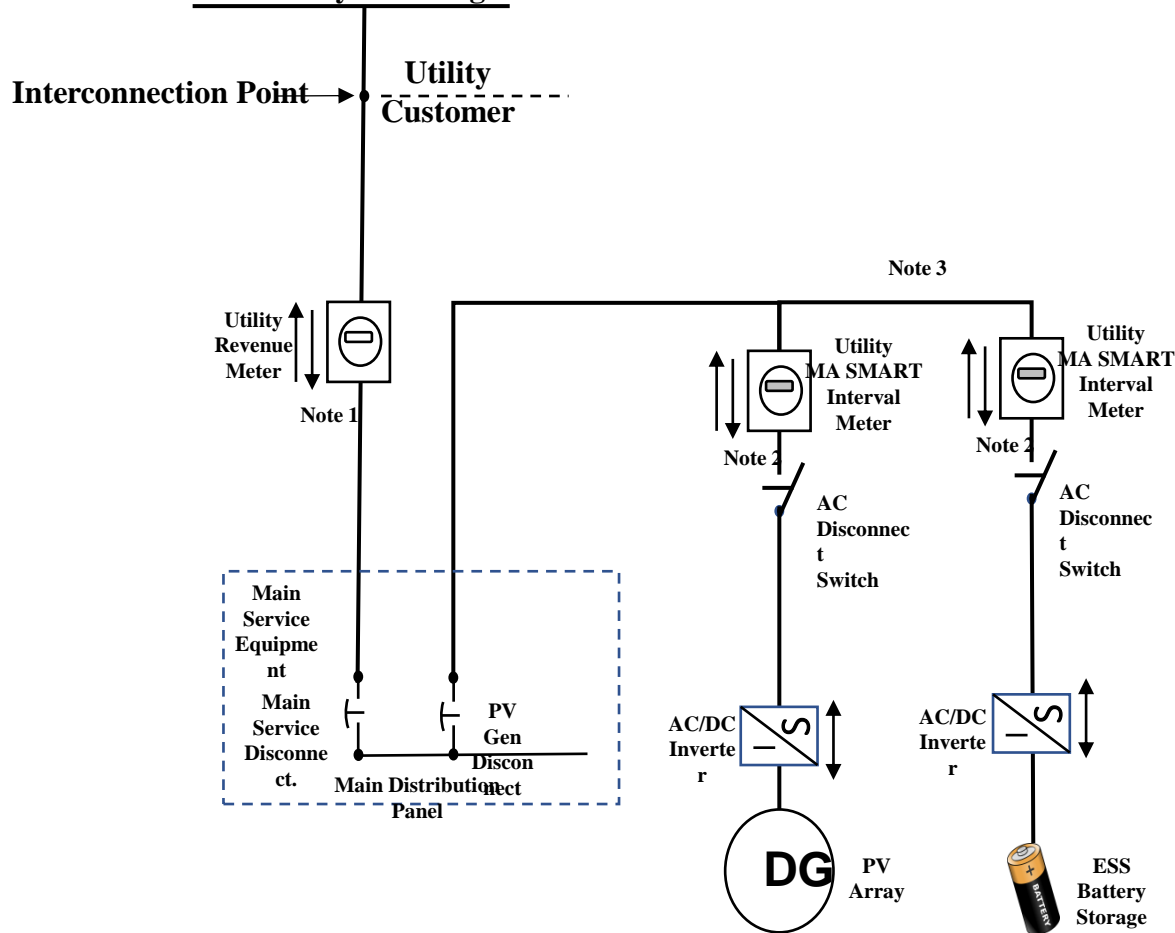
Note 1

- * Utility Meter will be Bidirectional Interval Recording cellular meter to be used for Utility Revenue and REC determination purposes.
- * Secondary metering CTs/VTs may be required.
- * Cellular connection at the meter location is required.
- * Utility Revenue Meter must be accessible.

5b. Stand Alone >60kW to 500kW

AC Connection to Utility EPS 60kW – 500kW
 Stand Alone Ma SMART
 With AC ESS System
 Utility Service Connection
 3-Phase 4-Wire System
 Secondary Metering

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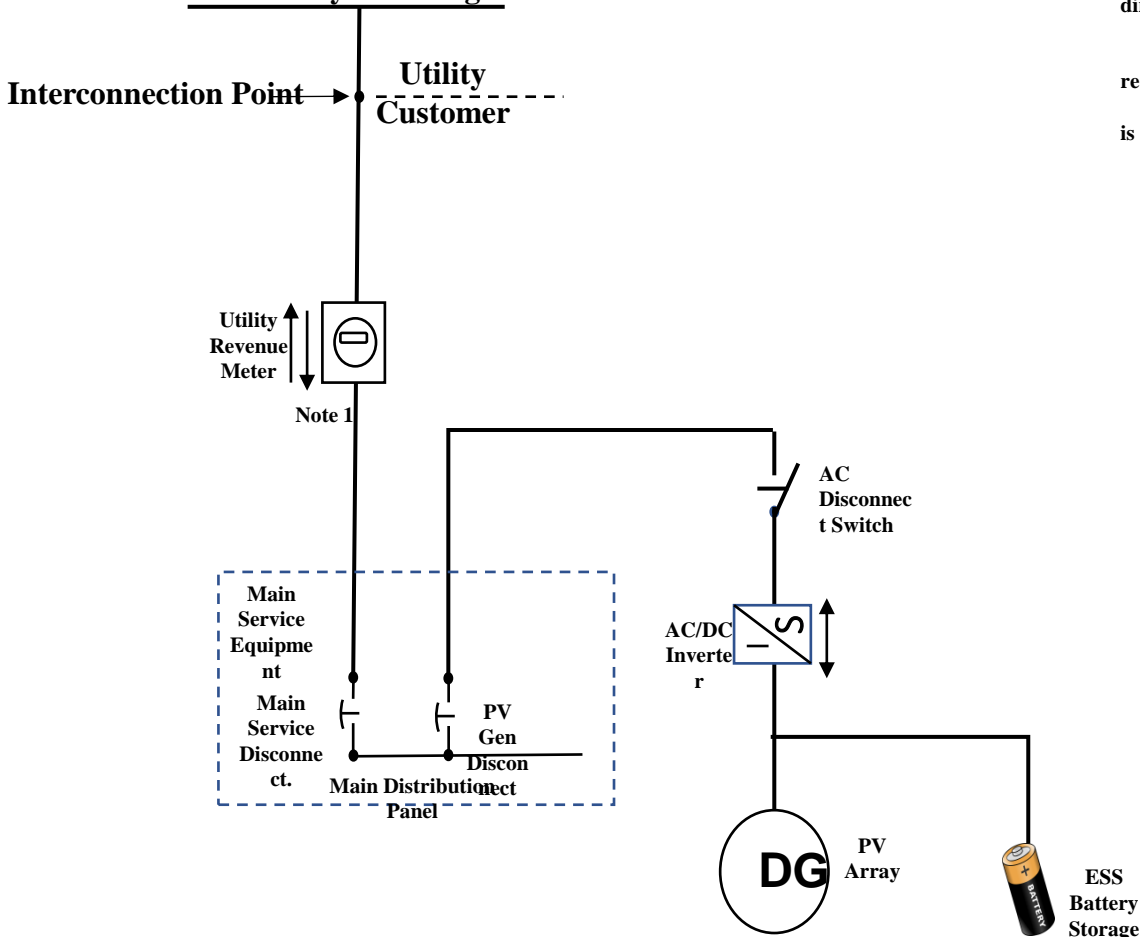
Note 1
 * Utility Revenue Meter installed will be Bi-directional
 * Interval Recording Cellular Meter
 * Secondary metering CTs/VTs may be required.
 * Cellular connection at the meter location is required.
 * Utility Revenue Meter must be accessible.

Note 2
 * Cellular connection at the meter location is required.
 * Utility SMART and ESS Meters must be accessible.

Note 3
 Every paired AC coupled PV Array and ESS system will be separately metered.

5c. Stand Alone >60kW to 500kW

**AC Connection to Utility EPS 60kW – 500kW
Stand Alone Ma SMART
With DC ESS System
Utility Service Connection
3-Phase 4-Wire System
Secondary Metering**

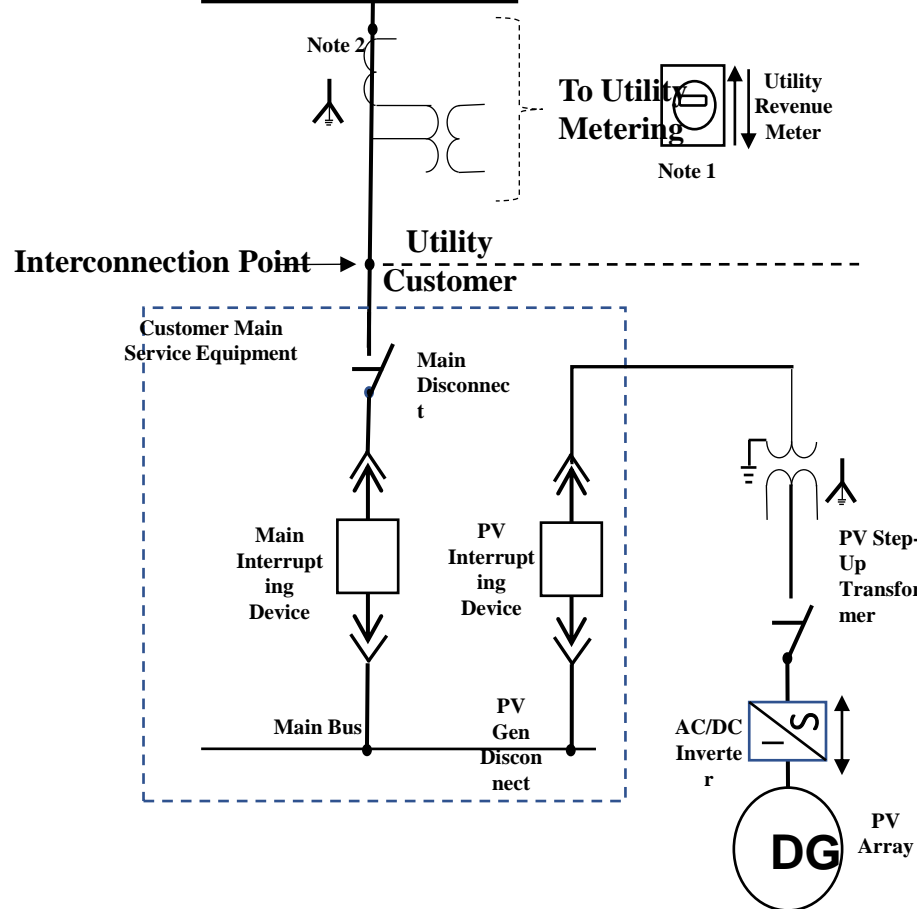


This diagram is representative of a standard design. Please contact Eversource for approval, if a different configuration is needed.

- Note 1**
- * Utility Revenue Meter installed will be Bi-directional
 - Interval Recording Cellular Meter
 - * Secondary metering CTs/VTs may be required.
 - * Cellular connection at the meter location is required.
 - * Utility Revenue Meter must be accessible.

6a. Stand Alone >500kW

**AC Connection to Utility EPS 500kW and Greater
Stand Alone Ma SMART
With No ESS System
Utility Service Connection
3-Phase 4-Wire System
Primary Metering**

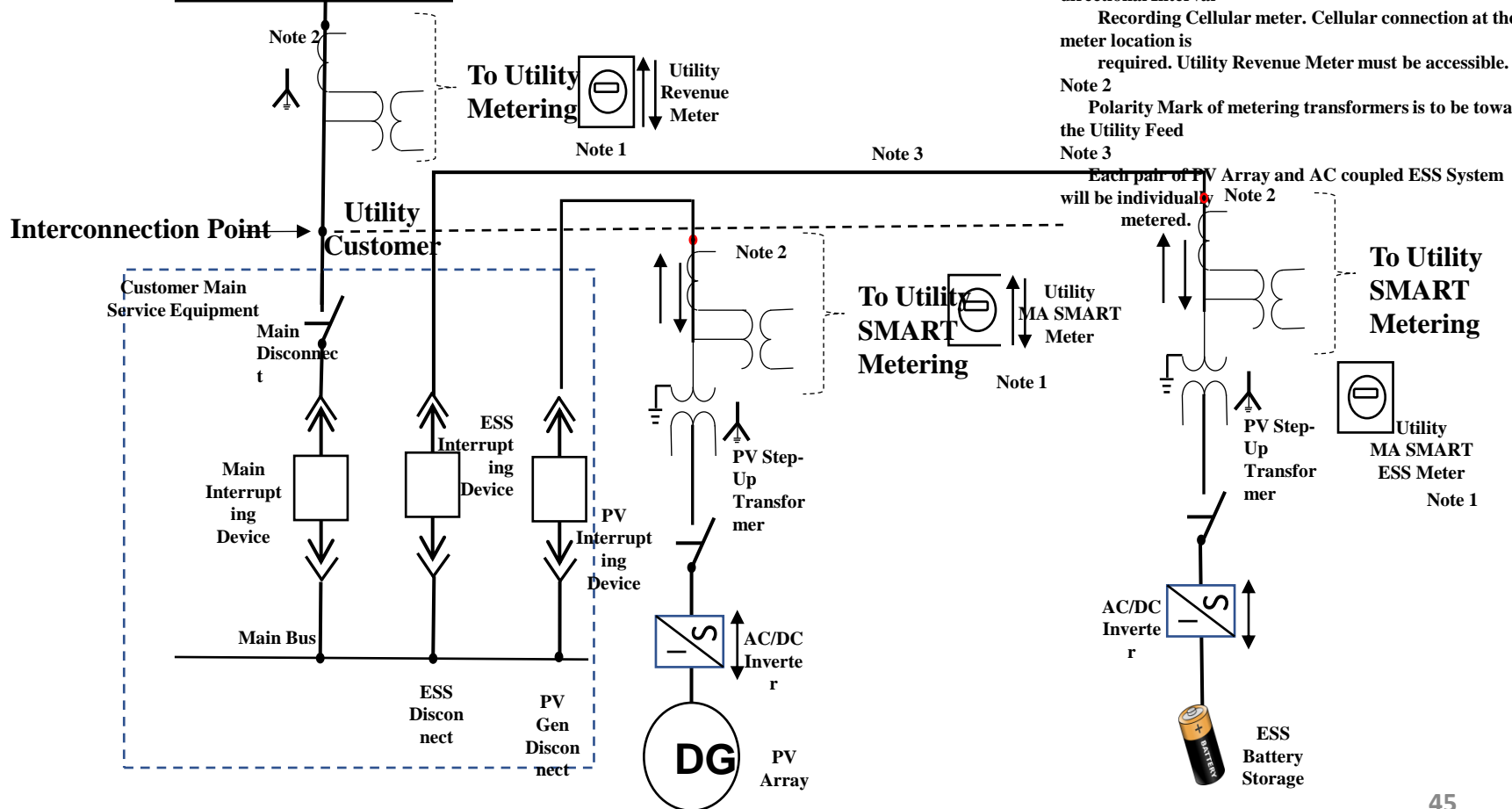


This diagram is representative of a standard design. Please contact Eversource for approval, if a different configuration is needed.

- Note 1**
- * Utility Revenue Meter installed will be Bi-directional Interval Recording cellular meter.
 - * Cellular connection at the meter location is required.
 - * Utility Revenue Meter must be accessible.

6b. Stand Alone >500kW

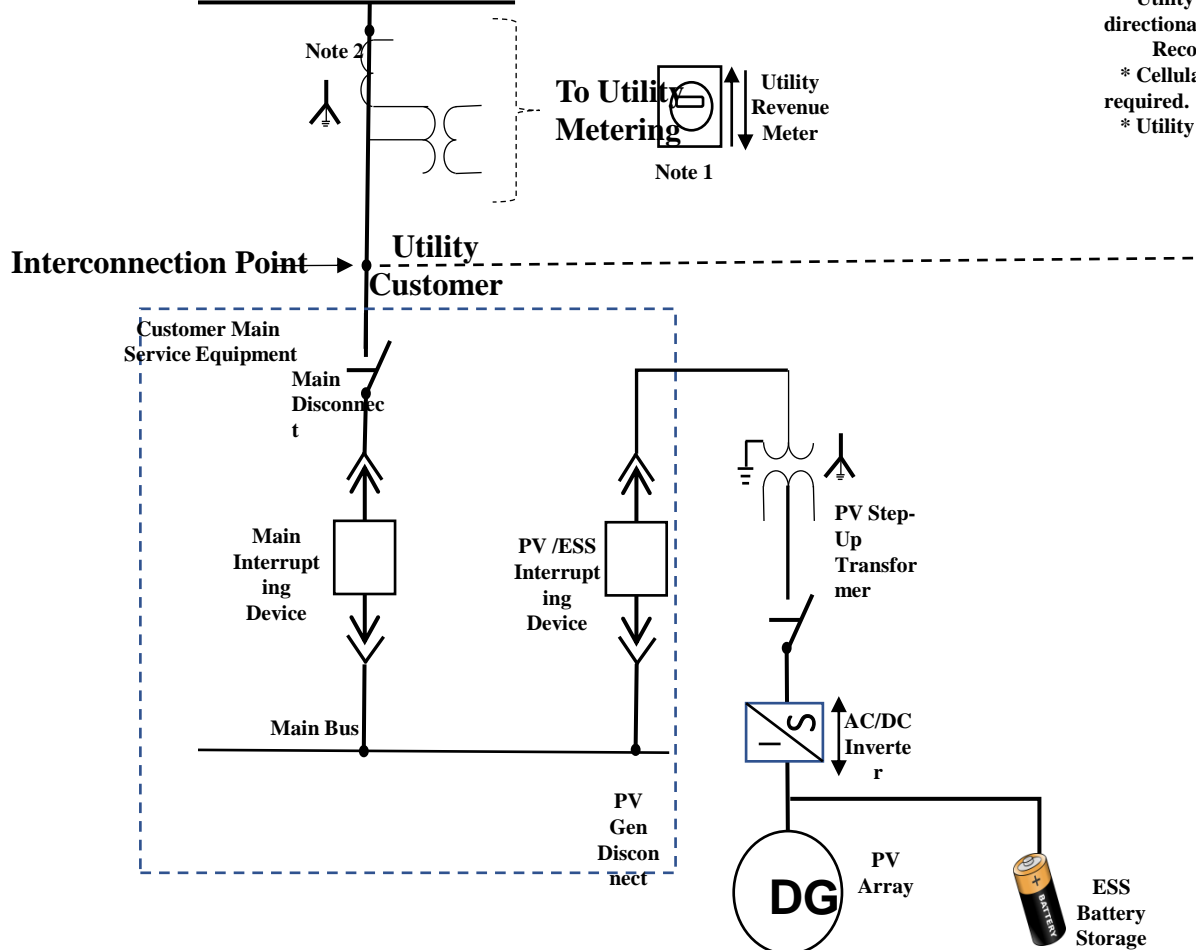
**AC Connection to Utility EPS 500kW and Greater
Stand Alone Ma SMART
With AC ESS System
Utility Service Connection
3-Phase 4-Wire System
Primary Metering**



This diagram is representative of a standard design. Please contact Eversource for approval, if a different configuration is needed.

6c. Stand Alone >500kW

**AC Connection to Utility EPS 500kW and Greater
Stand Alone Ma SMART
With DC ESS System
Utility Service Connection
3-Phase 4-Wire System
Primary Metering**



This diagram is representative of a standard design. Please contact Eversource for approval, if a different configuration is needed.

- Note 1**
- * Utility Revenue Meter installed will be Bi-directional Interval Recording Cellular meter.
 - * Cellular connection at the meter location is required.
 - * Utility Revenue Meter must be accessible.

- **The Interconnection Process** – What's changing, what won't
- **Timeline**
- **Roles of the Parties** – DOER, EDC, SPA interactions with program participants and the parties
- **National Grid/Utilities Metering Drafts**

Summary of Important Dates and Actions

Date(s)	Action
October 11, 2018 - October 19, 2018	In person SMART transition stakeholder meetings held throughout Commonwealth
October 16, 2018	EDCs jointly file revised model tariff with DPU
October 24, 2018	SMART Statement of Qualification Application webinar
November 1, 2018	EDCs individually file SMART Factor cost recovery filings with DPU
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November 30, 2018	Initial SMART application period ends at 11:59 PM ET
Approx. December 1, 2018	MLP solar rebate program opens and begins accepting applications
December 10, 2018	Documents demonstrating mechanical completion due for SREC II systems larger than 25 kW DC
February 15, 2019	SREC II applications systems equal to or smaller than 25 kW DC due
TBD	DPU order approving revised joint model tariff
TBD	EDCs file company specific SMART tariffs
TBD	DPU approves company specific SMART tariffs
TBD	DPU issues order on 17-146

Things staying the same:



- EDC specific processes and tools for making, monitoring interconnection requests
- Interconnection timelines
- EDC teams supporting the interconnection process

The MA SMART / SPA incentive application process is designed to complement the EDC interconnection process, not replace it

Things that will change:

- Additional applicant-paid metering charges
- In behind the meter situations, need for a second, utility installed meter for measuring system output behind the retail meter
 - Will require customer-installed wiring, installation of a second meter socket
 - Must be adequately accessible, proximate to existing utility revenue meter

Issue type	Primary point of contact
General MA SMART Program questions	
Program / adder eligibility questions	
Incentive application status / process questions	
Interconnection application status / process questions	
Incentive rate calculation questions	
Incentive payment questions	

Behind-the-Meter	Standalone
 <p data-bbox="363 905 942 1125">System that serves on-site load other than parasitic or station load utilized to operate the unit</p>	 <p data-bbox="993 905 1619 1125">System that serves no associated on-site load other than parasitic or station load utilized to operate the unit</p>

Behind the meter systems will be compensated differently than standalone systems

Billing Review DRAFT

DETAIL OF CURRENT CHARGES

Delivery Services

Service Period	No. of Days	Current Reading	Previous Reading	Total Usage
Jul 7 - Aug 5	29	1200	500	700

METER NUMBER 99999999 NEXT SCHEDULED READ DATE ON OR ABOUT Aug 8

SERVICE PERIOD Jun 6 - Jul 7 NUMBER OF DAYS IN PERIOD 29

RATE Residential Regular R-1

Customer Charge				10
Dist Chg	0.06236	x	700 kWh	43.65
Transition Charge	0.02084	x	700 kWh	14.59
Transmission Charge	0.0005	x	700 kWh	0.35
Energy Efficiency Chg	0.03056	x	700 kWh	21.39
Renewable Energy Chg	0.00054	x	700 kWh	0.38

Total Delivery Services \$85.86

Supply Services

SUPPLIER National Grid

Energy Charge	0.12673	x	700 kWh	88.71
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Total Supply Services \$88.71

MA SMART Incentive Program

Service Period	No. of Days	Current Reading	Previous Reading	Total Usage
Jul 7 - Aug 5	29	46005	44805	1200 kWh

METER NUMBER 99999999 NEXT SCHEDULED READ DATE ON OR ABOUT Aug 8

SERVICE PERIOD Jun 6 - Jul 7 NUMBER OF DAYS IN PERIOD 31

RATE Small C&I G-1

SMART Compensation Payment

Total Compensation(Incl. QF pmt.)	\$0.28	x	1200kwh	\$ 336.00
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Total SMART Payment \$336.00

Residential/Commercial DG Customer SMART SOLAR Metering Notes

DER: Distributed Energy Resource
DG: Distributed Generator (a subset of DER)
EPS: Electric Power System
IC: Interconnection Customer
PCC: Point of Common Coupling
PoC: Point of Connection
Wh: Watthour Meter (may include demand quantities of Watts and VA)

NOTES:

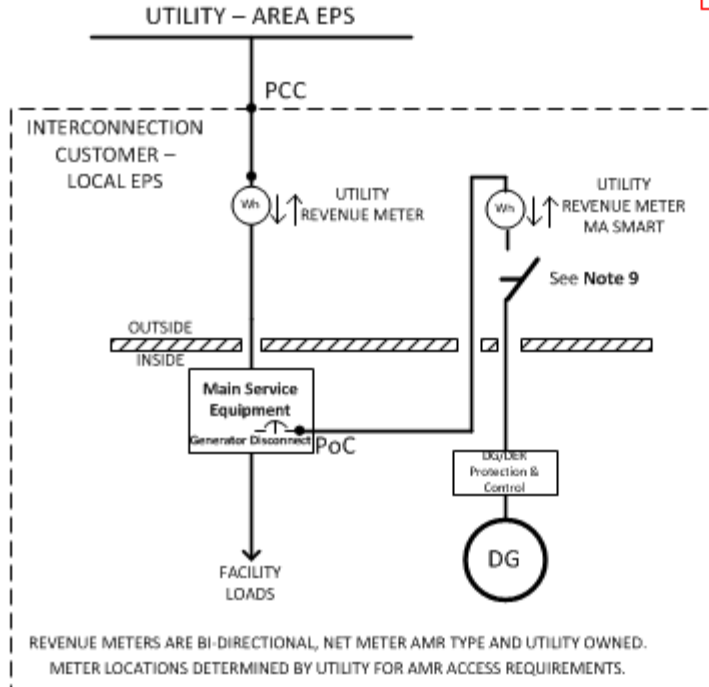
1. All Interval metering requires telemetry.
2. Grouped meter location and installation shall be according to National Grid's jurisdiction applicable service and tariff requirements. See ESB 750 and ESB 756 Appendix C for the MA service jurisdiction (<https://www.nationalgridus.com/ProNet/Technical-Resources/Electric-Specifications>).
 - IC installs meter socket trough grouped at service location accessible for National Grid's AMR meters (net type for load + DER and bi-directional for MA SMART DER).
 - < 60 kW applications are watthour type revenue meters and > 60 kW are interval type.
 - All kWh measured through the MA SMART meter is compensated through the MA SMART incentive rate.
3. Generator disconnect installed according to NEC and National Grid's MDPU Interconnection Tariff.
4. Inverters shall be UL 1741 or UL 1741 SA certified for parallel operation with the utility (area EPS).
5. Where existing PCC meter is inside, the IC will upgrade their service connection to change it to outside location grouped with MA SMART Solar meter.
6. Bypass meter sockets required in accordance to ESB 750 table 7.2-1.
7. Certified Inverter-based DER Interconnections <25kW may not be required to have an additional disconnecting means in accordance with ESB 756 Appendix C.
8. The following drawings are conceptual only. It is the responsibility of the customer to adhere to all applicable codes, standards and requirements.
9. 25 kW and below residential services do not require an additional disconnect at the Smart Solar production meter.

1a

RETAIL

Residential/Commercial DG Customer Behind the Meter MA SMART < 60 kW (Behind Main Service Equipment)

This diagram is representative of one proposal and the utility may require other configurations.

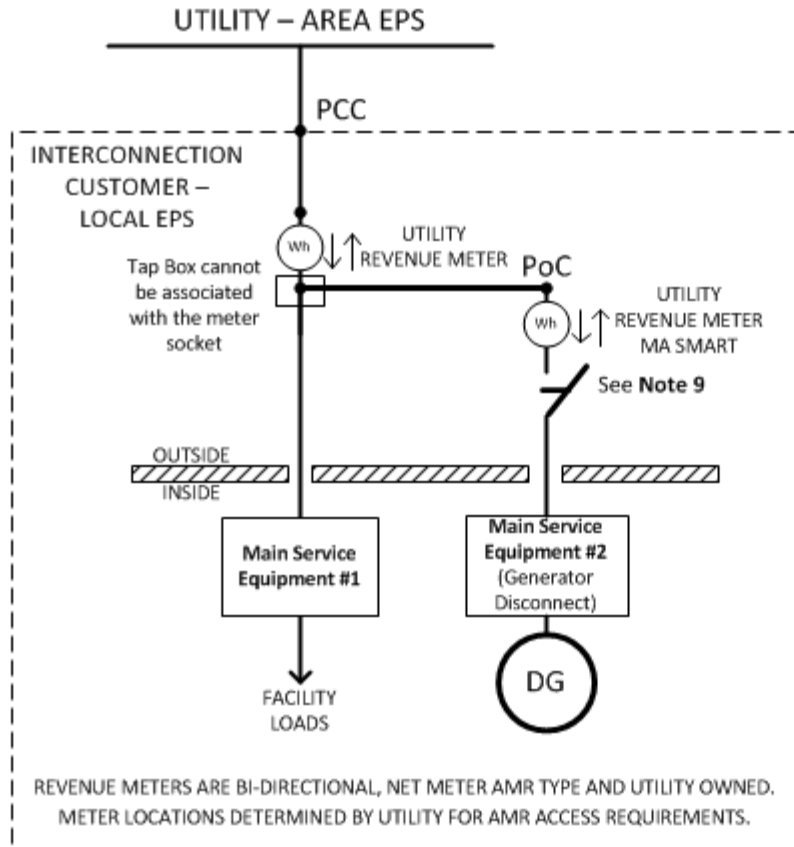


1b

This diagram is representative of one proposal and the utility may require other configurations.

RETAIL

**Residential/Commercial DG Customer
Behind the Meter MA SMART < 60 kW
(Tap Ahead of Main Service Equipment)**

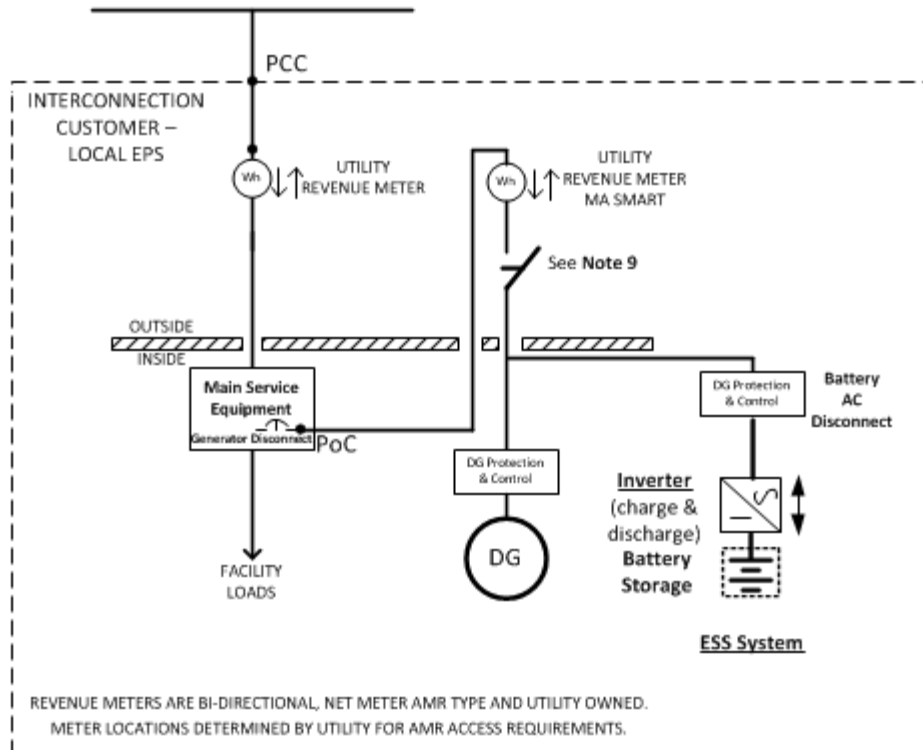


1c

This diagram is representative of one proposal and the utility may require other configurations.

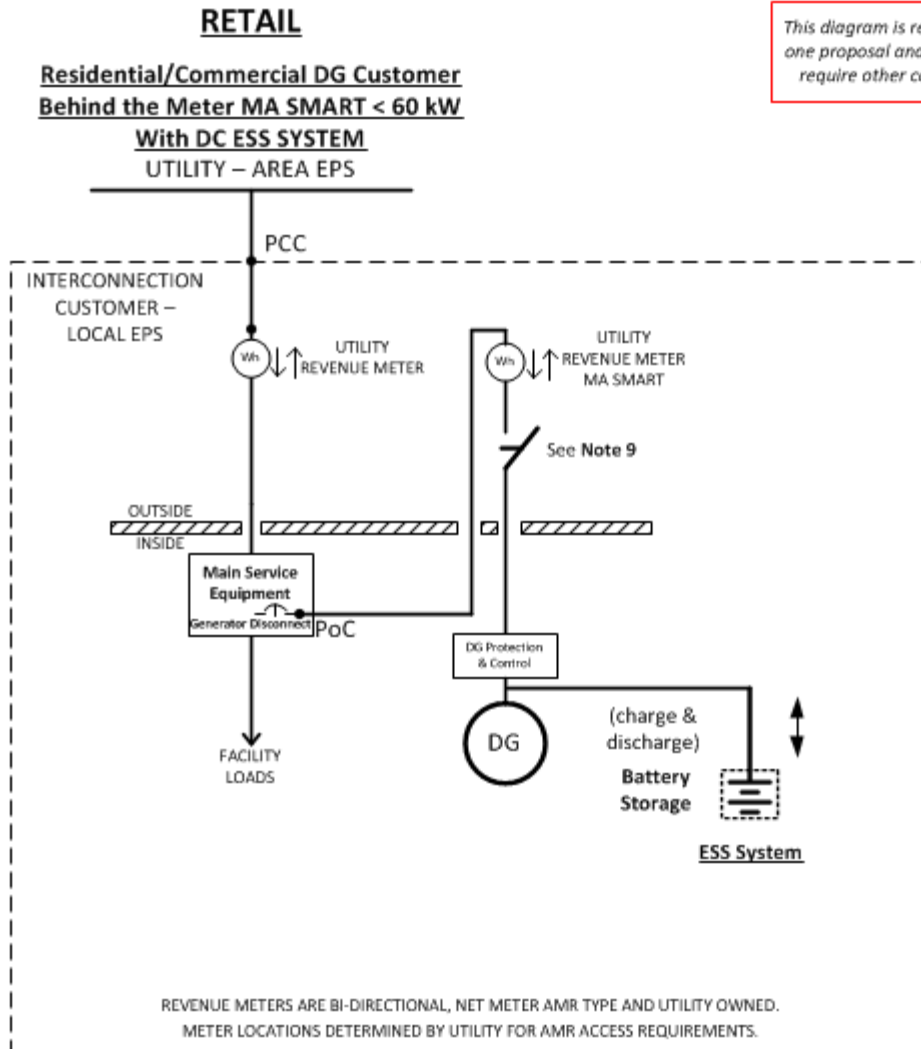
RETAIL

**Residential/Commercial DG Customer
Behind the Meter MA SMART < 60 kW
With AC ESS SYSTEM
UTILITY – AREA EPS**



1d

This diagram is representative of one proposal and the utility may require other configurations.



BTM ≥ 60 kW to 500 kW

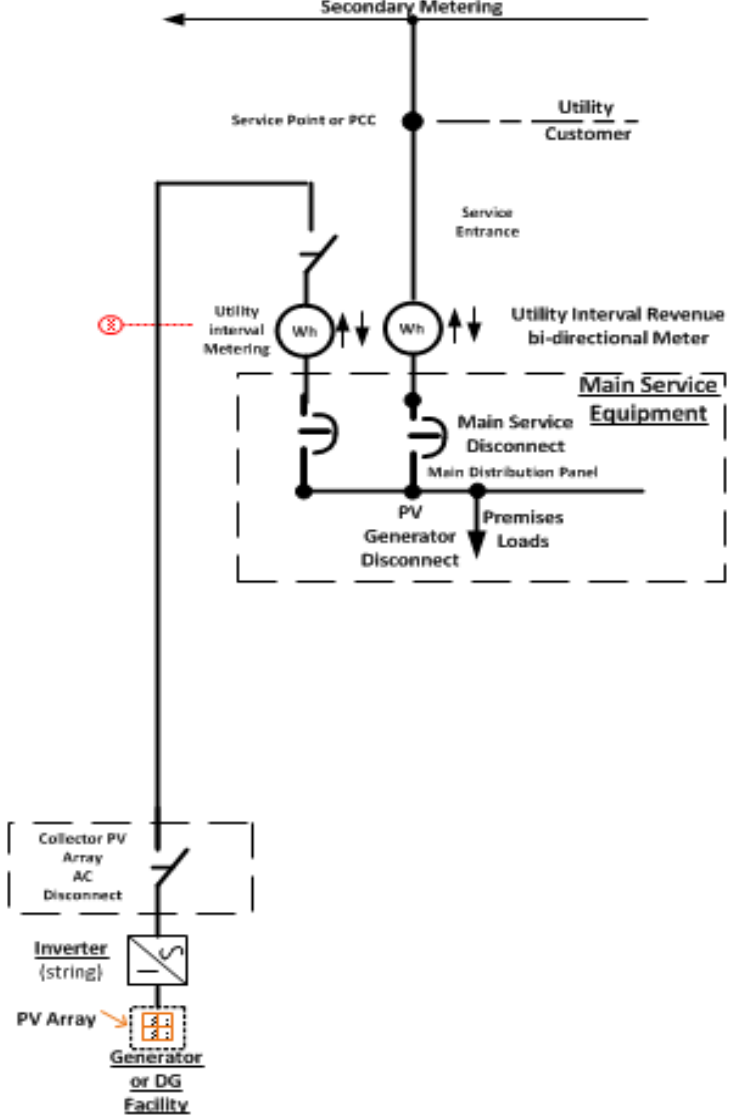
STGU AC Connection to Utility EPS 60 to 500kW

2a

Behind the Meter MA SMART

Utility's Radial Distribution
3-Phase, 4-Wire System
Secondary Metering

This diagram is representative of one proposal and the Company may require other configurations.



BTM ≥ 60 kW to 500 kW

ESS Battery + STGU Paired AC Connection to Utility EPS 60 to 500kW

2b

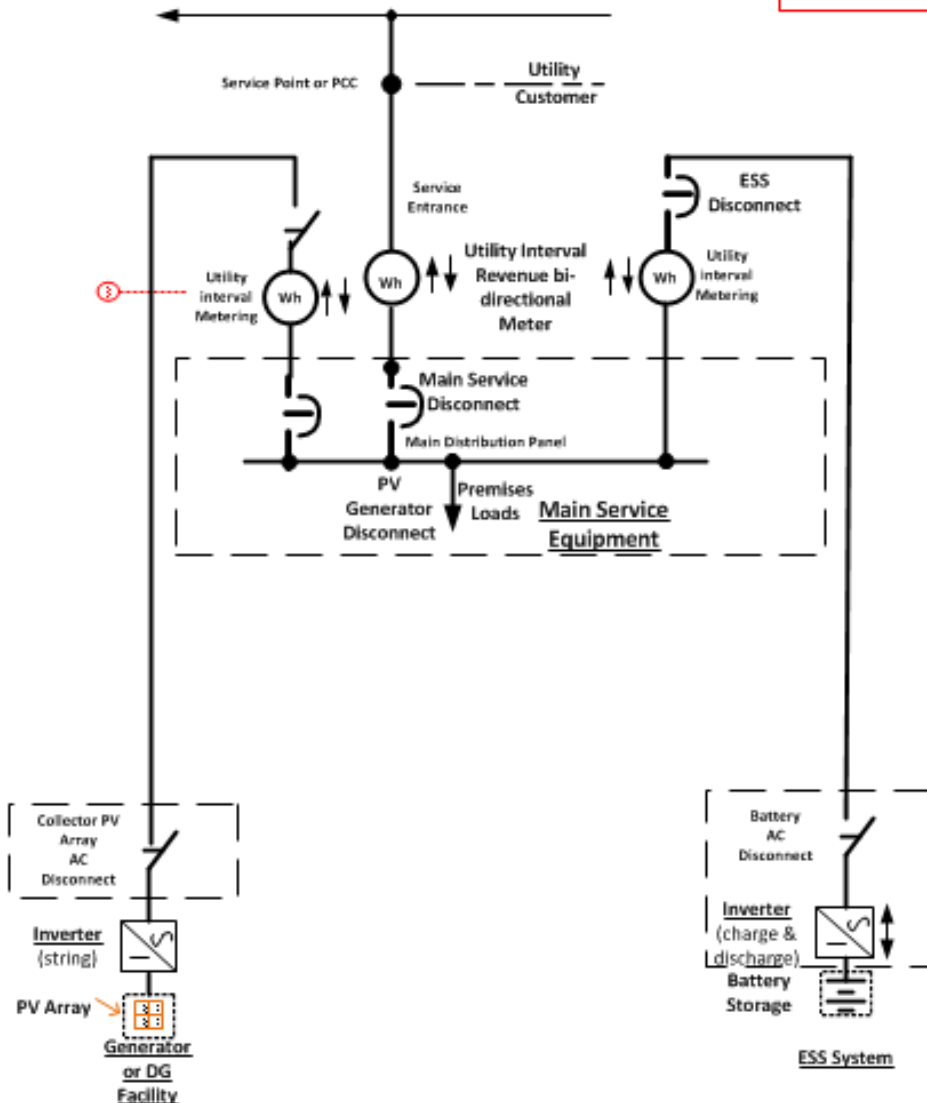
Behind the Meter MA SMART

Utility's Radial Distribution

3-Phase, 4-Wire System

Secondary Metering

This diagram is representative of one proposal and the Company may require other configurations.



BTM ≥ 60 kW to 500 kW

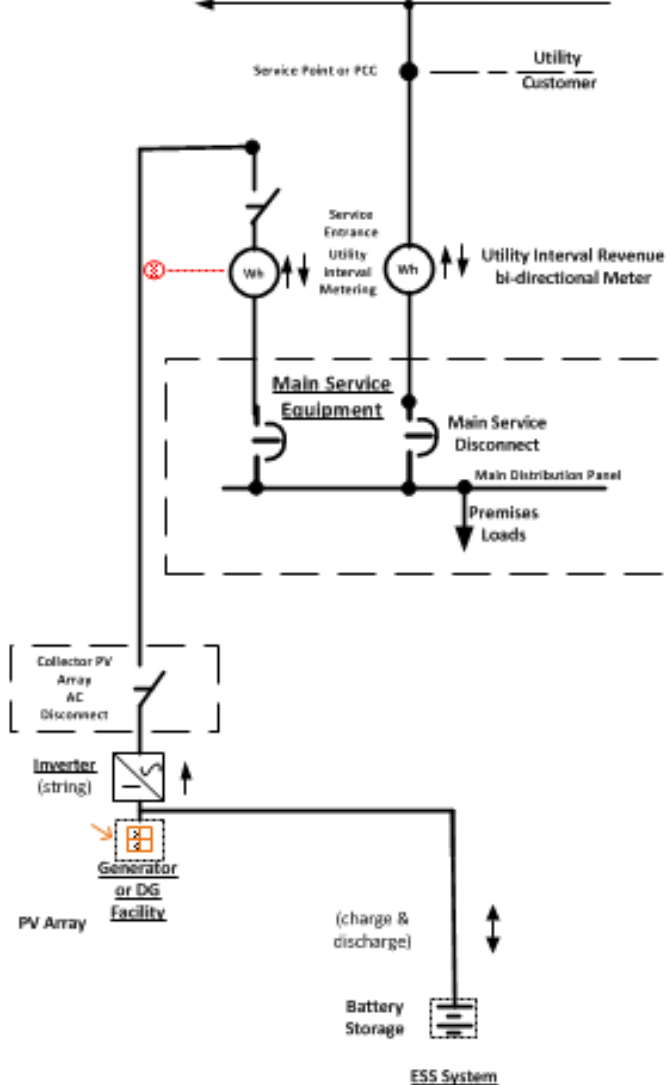
DC ESS Battery + STGU Paired Connection to Utility EPS 60 to 500kW

2c

Behind the Meter MA SMART

Utility's Radial Distribution
3-Phase, 4-Wire System
Secondary Metering

This diagram is representative of one proposal and the Company may require other configurations.

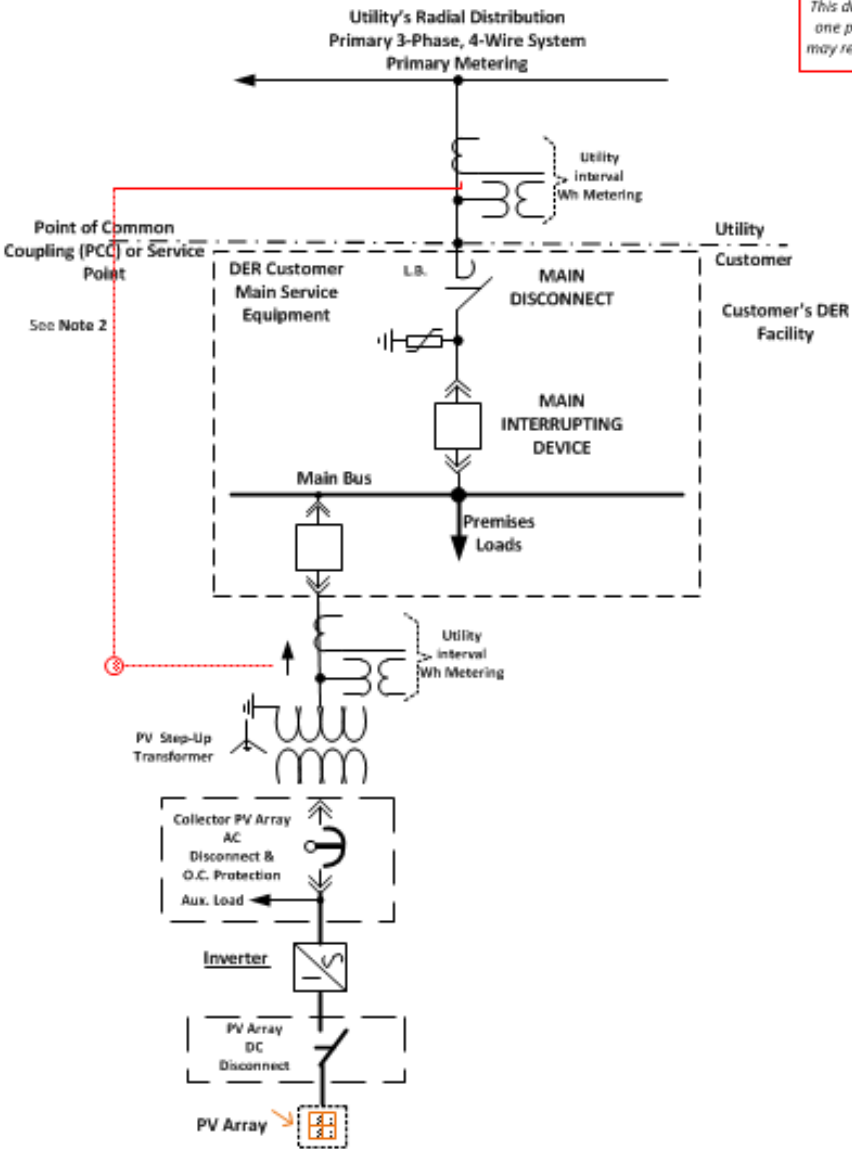


BTM > 500 KW

STGU Paired AC Connection to Utility EPS 500kW and Greater Behind the Meter MA SMART

3a

This diagram is representative of one proposal and the Company may require other configurations.



BTM > 500 KW

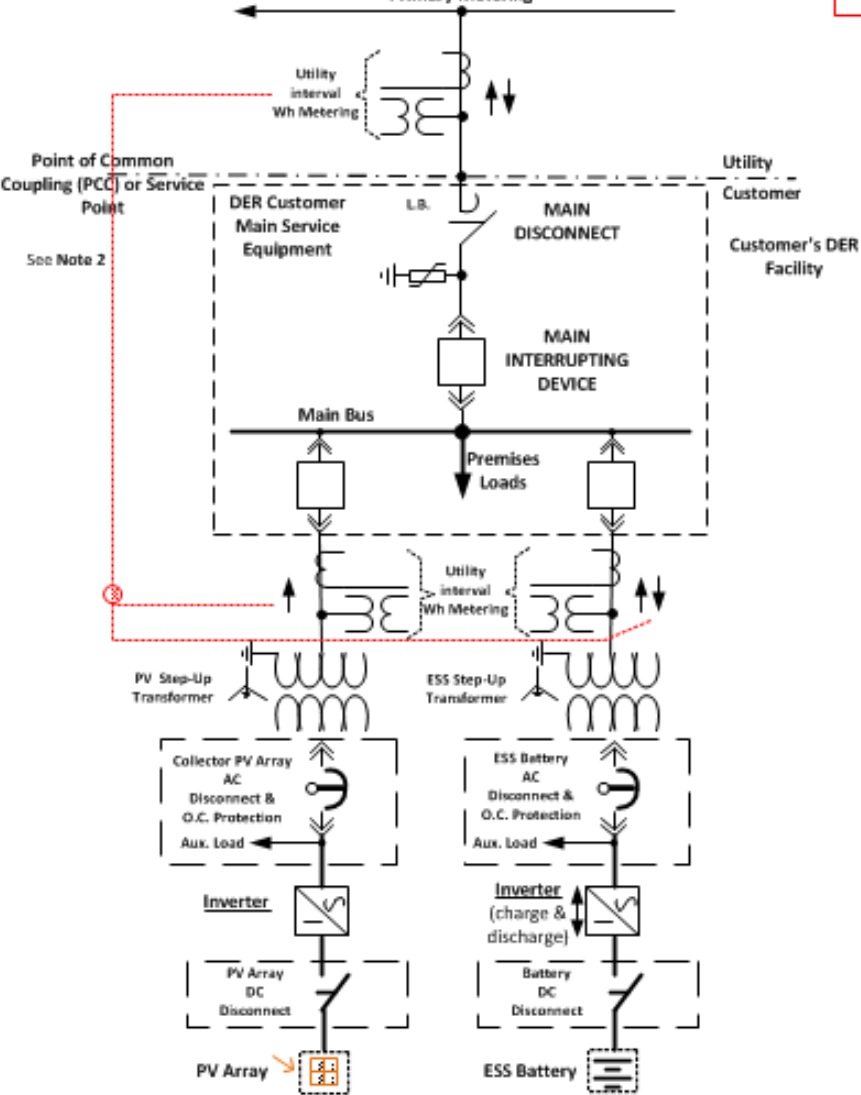
ESS AC Battery + STGU Paired AC Connection to Utility EPS 500kW and Greater

3b

Behind the Meter MA SMART

Utility's Radial Distribution
Primary 3-Phase, 4-Wire System
Primary Metering

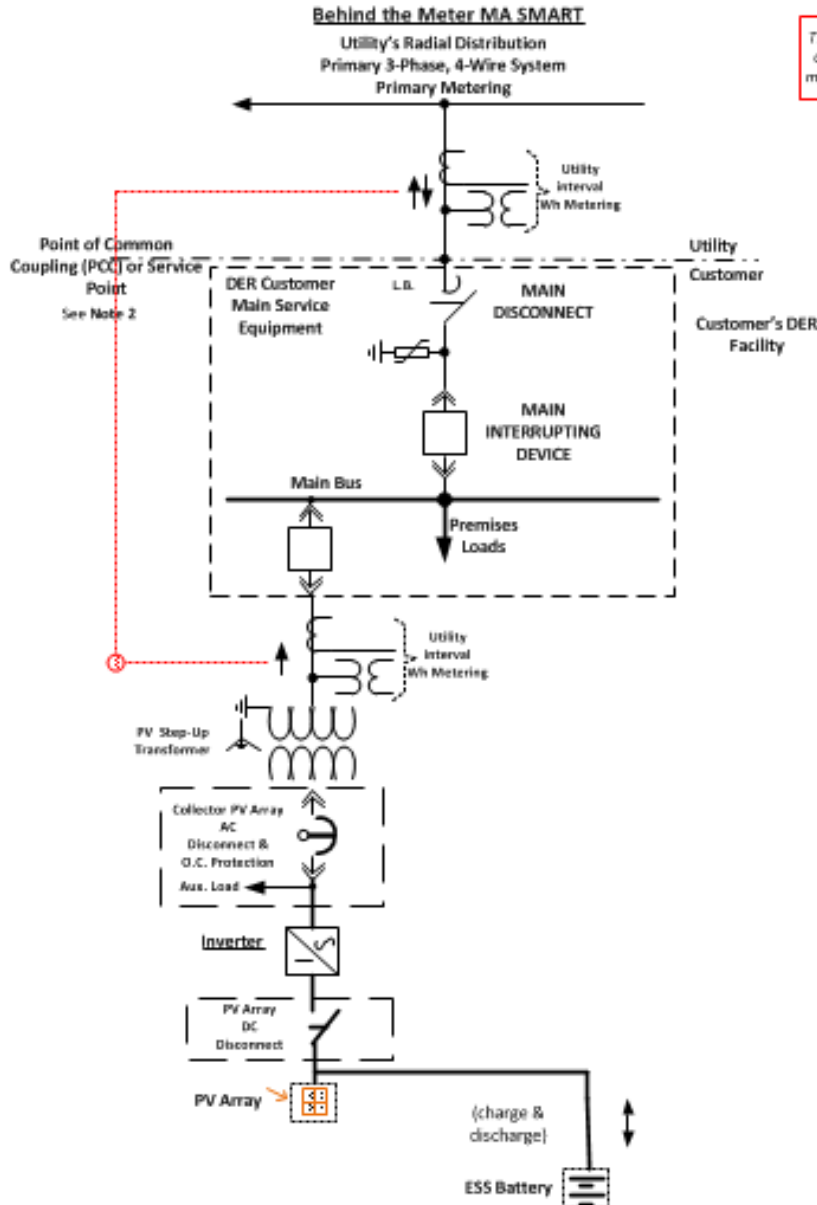
This diagram is representative of one proposal and the Company may require other configurations.



BTM > 500 KW

ESS DC Battery + STGU Paired AC Connection to Utility EPS 500kW and Greater

3c



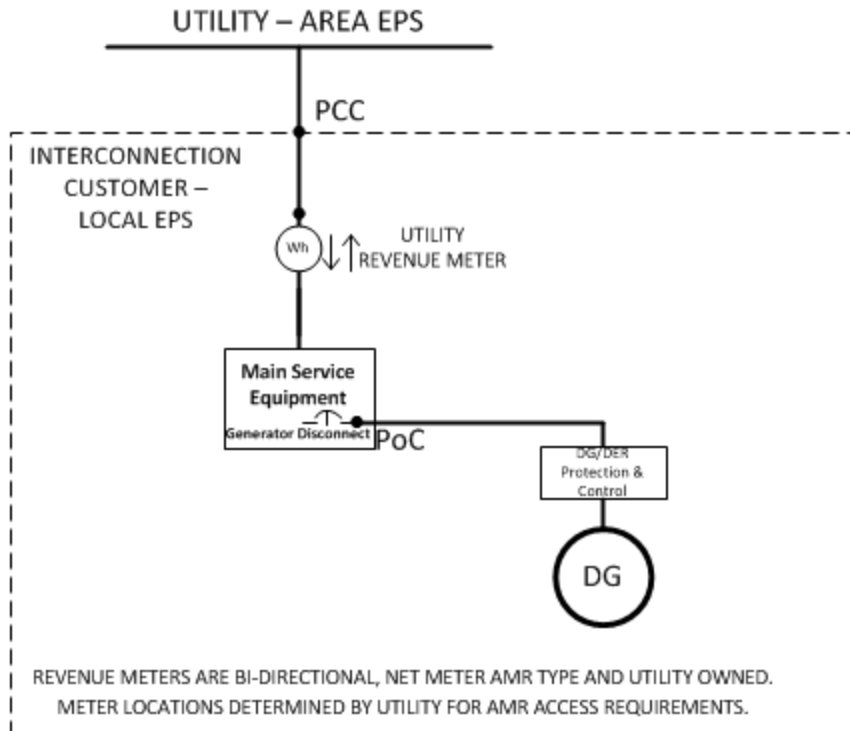
This diagram is representative of one proposal and the Company may require other configurations.

4a

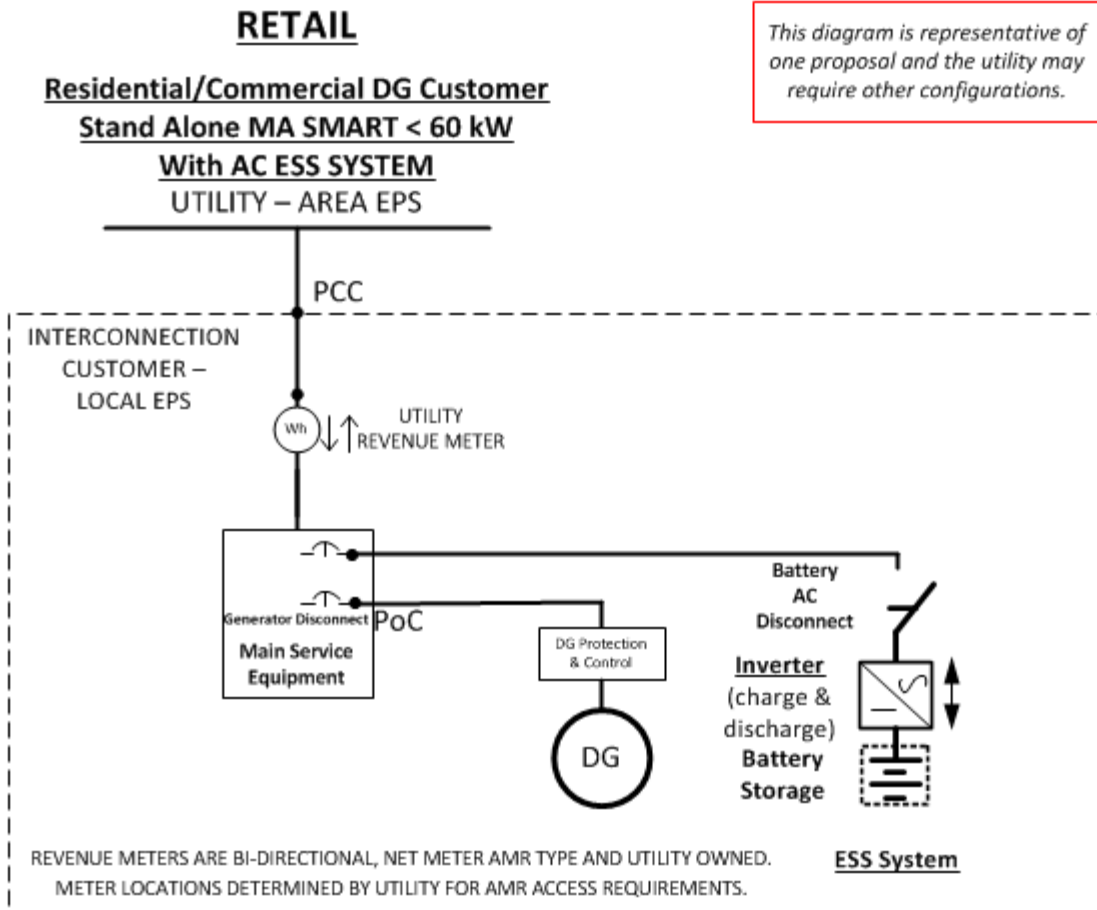
RETAIL

Residential/Commercial DG Customer Stand Alone MA SMART < 60 kW

This diagram is representative of one proposal and the utility may require other configurations.



4b



4c

RETAIL

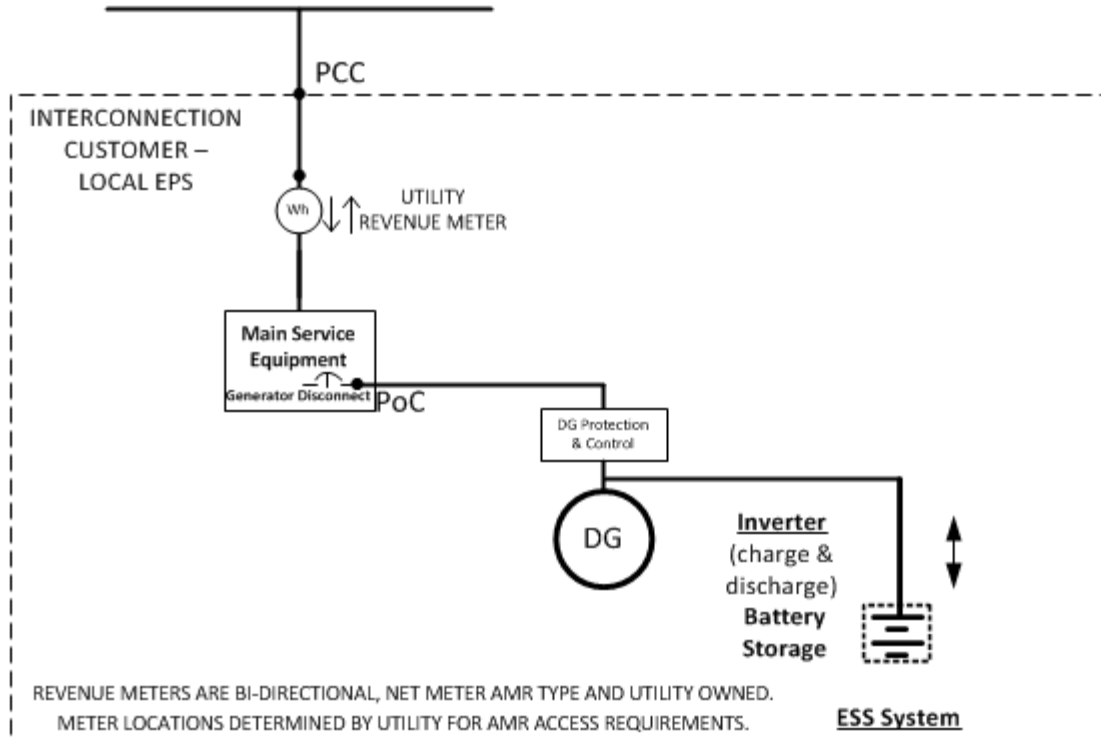
Residential/Commercial DG Customer

STAND ALONE MA SMART < 60 kW

With DC ESS SYSTEM

UTILITY – AREA EPS

This diagram is representative of one proposal and the utility may require other configurations.



Stand Alone > 60 kW to < 500 kW nationalgrid

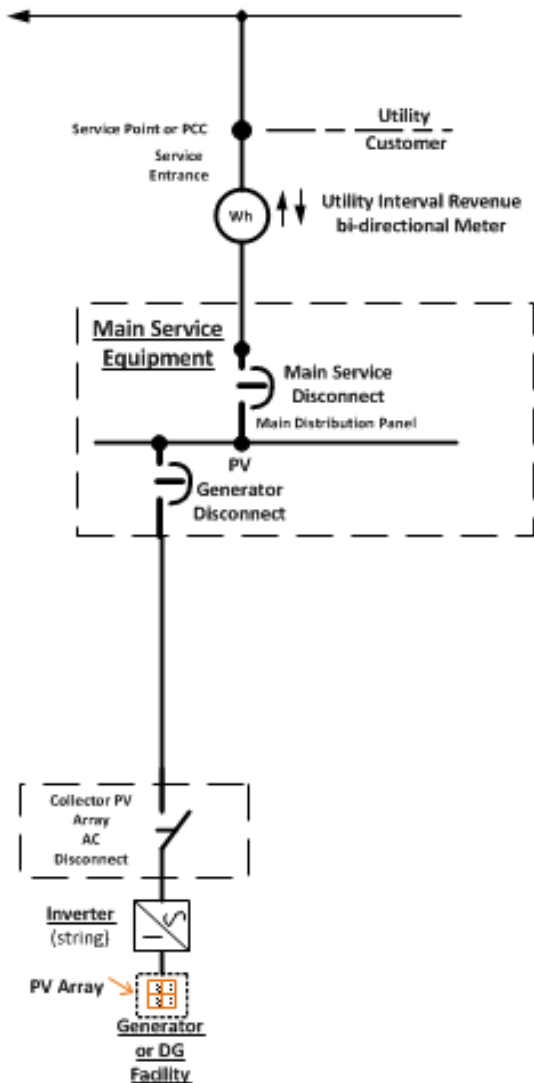
STGU AC Connection to Utility EPS 60 to 500kW

5a

Standalone MA SMART

Utility's Radial Distribution
3-Phase, 4-Wire System
Secondary Metering

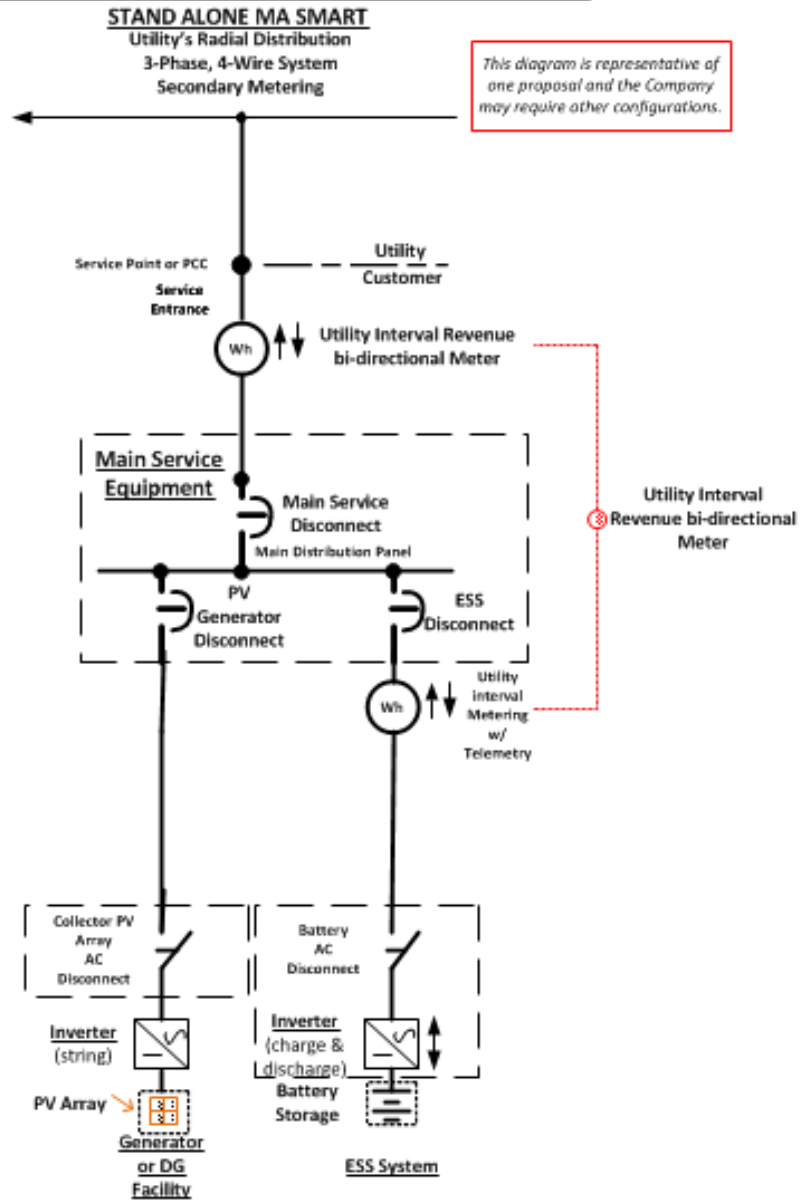
This diagram is representative of one proposal and the Company may require other configurations.



Stand Alone > 60 kW to < 500 kW nationalgrid

AC ESS Battery + STGU Paired AC Connection to Utility EPS 60 to 500kW

5b



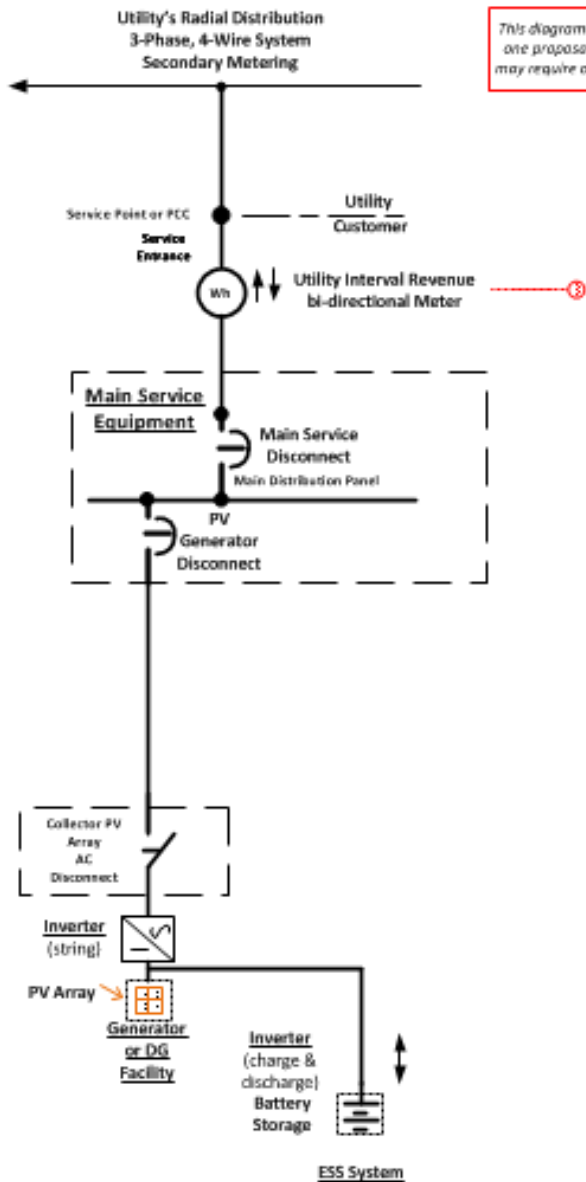
Stand Alone > 60 kW to < 500 kW nationalgrid

DC ESS Battery + STGU Paired AC Connection to Utility EPS 60 to 500kW

STAND ALONE MA SMART

5c

This diagram is representative of one proposal and the Company may require other configurations.



Stand Alone > 60 kW to < 500 kW nationalgrid

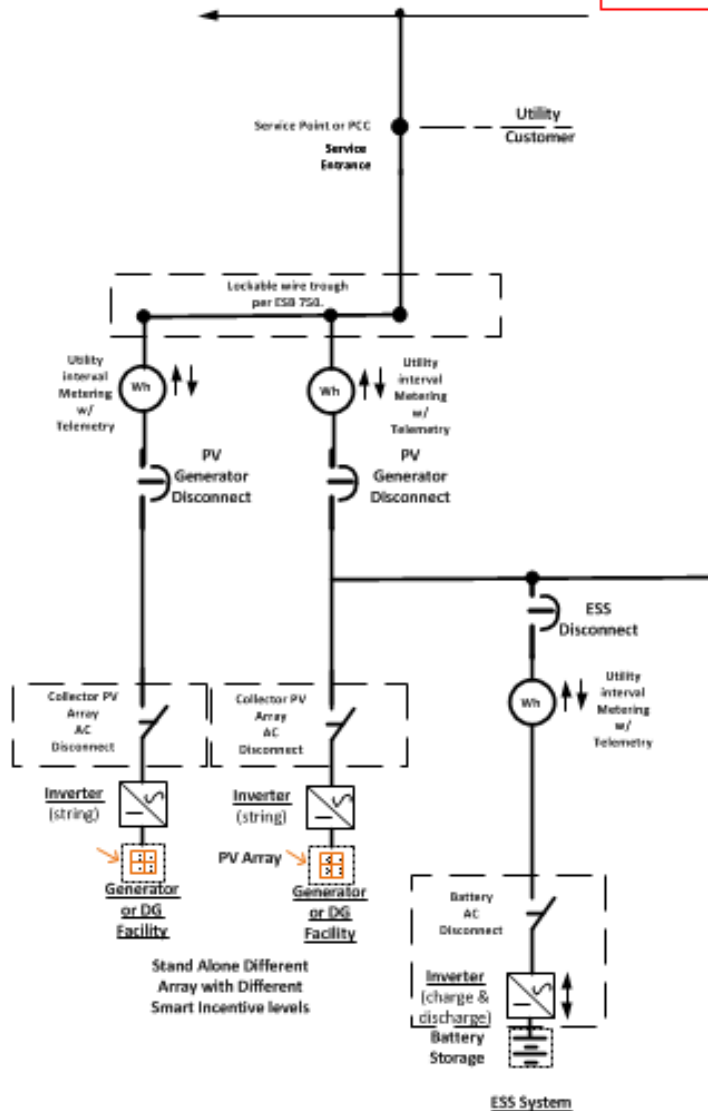
5d

AC ESS Battery + STGU Paired AC Connection to Utility EPS 60 to 500kW

STAND ALONE MA SMART

Utility's Radial Distribution
3-Phase, 4-Wire System
Secondary Metering

This diagram is representative of one proposal and the Company may require other configurations.



Stand Alone > 500 kW

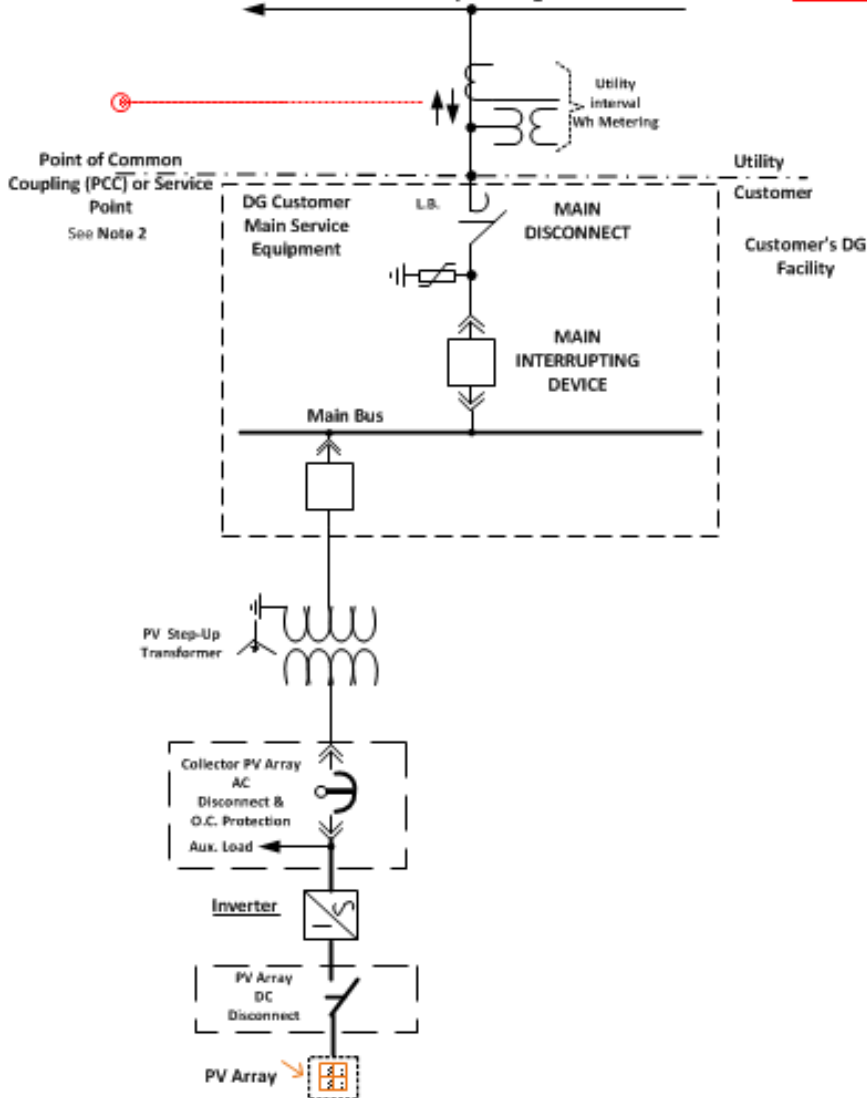
STGU AC Connection to Utility EPS 500kW and Greater

6a

STAND ALONE MA SMART

Utility's Radial Distribution
Primary 3-Phase, 4-Wire System
Primary Metering

This diagram is representative of one proposal and the Company may require other configurations.



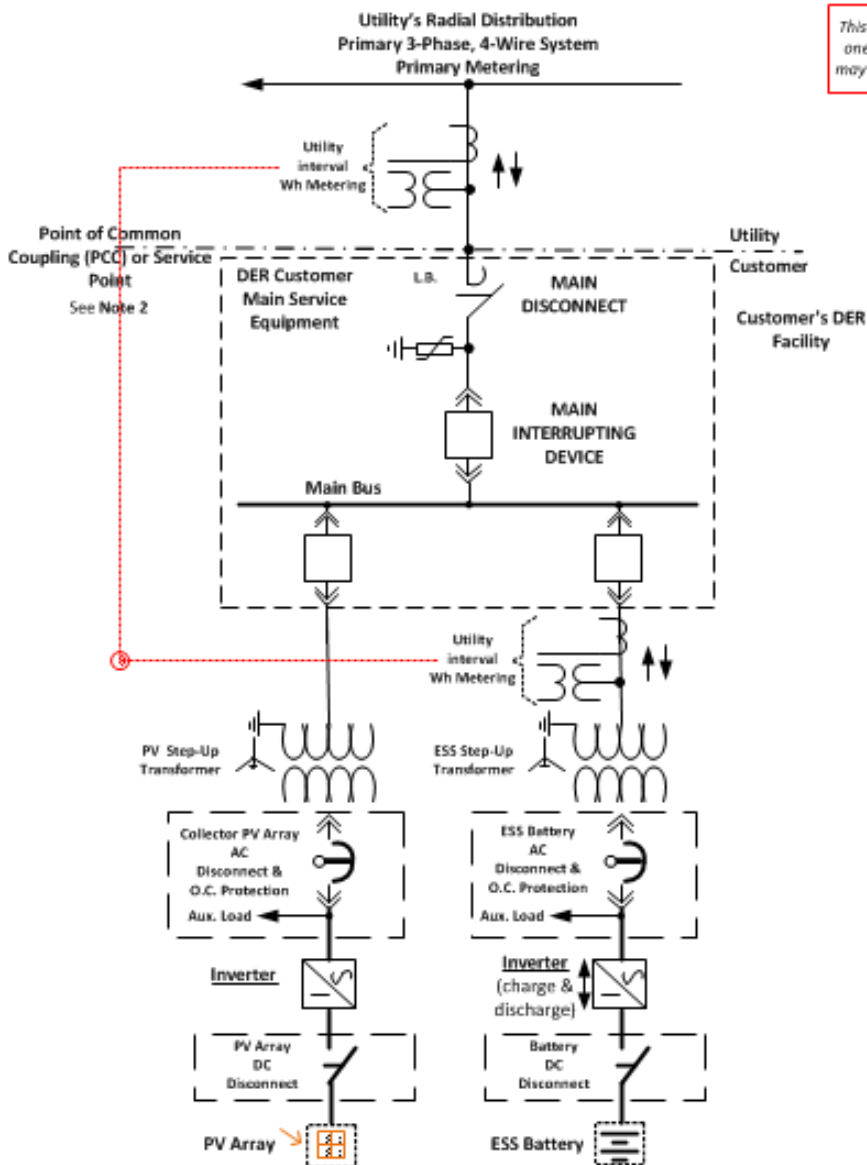
Stand Alone > 500 kW

AC ESS Battery + STGU Paired AC Connection to Utility EPS 500kW and Greater

STAND ALONE MA SMART

6b

This diagram is representative of one proposal and the Company may require other configurations.



- Gerald (Jed) Ferris
 - Smart Solar Program Manager
 - National Grid
 - 401 784-7364 Work
 - 401 450-9417 Cell
 - Gerald.Ferris@nationalgrid.com
 - 245 South Main Street, Hopedale, MA.
- <https://www.mass.gov/solar-massachusetts-renewable-target-smart>



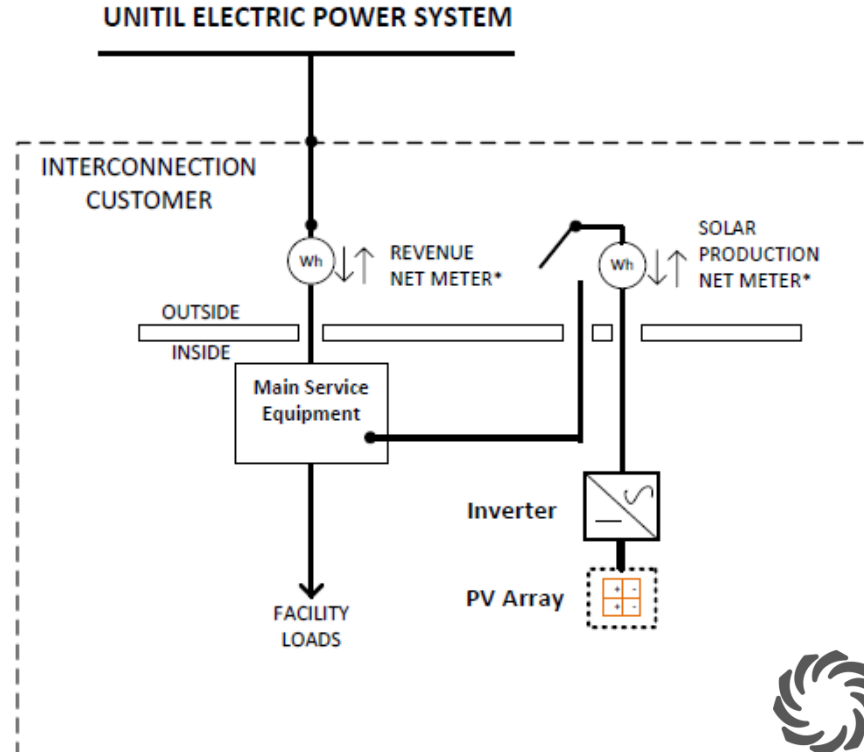
Solar Massachusetts Renewable Target ("SMART") Program Metering Configurations

The drawings included in this document are guidelines for metering configurations related to the MA-SMART program. The guidelines depict typical metering configurations with the understanding that all system designs will be reviewed and inspected by Unitil personnel prior to approval. Consideration for meter configurations include:

1. Revenue and production meters will be Unitil owned, bi-directional, watt-hour meters.
2. Unitil owned meters will be installed, removed, and changed by authorized Unitil personnel or approved contractors.
3. Meter location and installation shall be according to Unitil's jurisdiction applicable service and tariff requirements.
4. Unless in located in an approved electrical utility room, existing revenue meter that are located inside, will require the service connection be upgraded so both the revenue and production meter are located outside.
5. Revenue and production meters will be located in close proximity of each other.
6. Meter sockets up to 400 amps will be provided by the customer.
7. Meter installations rated greater than 400 amps will require transformer rated metering.
8. For inverters with AC ratings > 60 kW, both revenue and production watt-hour meters are capable of recording interval readings. These applications require telemetering be available.
9. Generator disconnect switch is to be installed in accordance with NEC and Unitil's interconnection requirements.

Behind the Meter Solar

This diagram is representative of a typical system design. All system configurations must be approved by Unitil.



* Transformer rated metering is require for ratings > 400 amps

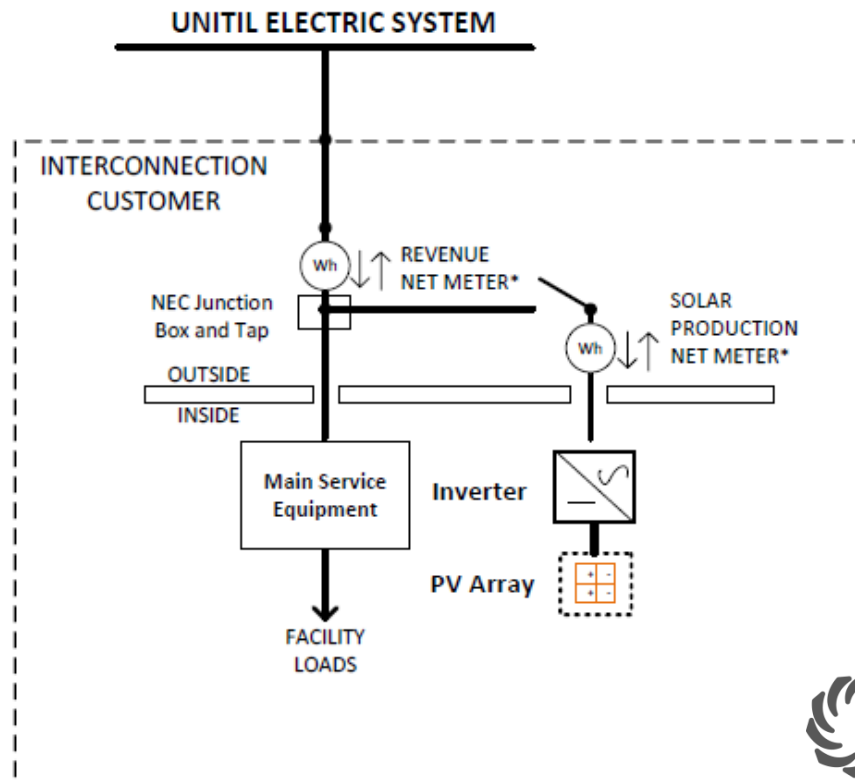


Unitil

MA ELECTRIC OPERATIONS

Behind the Meter Solar Alternative Connection

*This diagram is representative of a
typical system design. All system
configurations must be approved
by Unitil.*



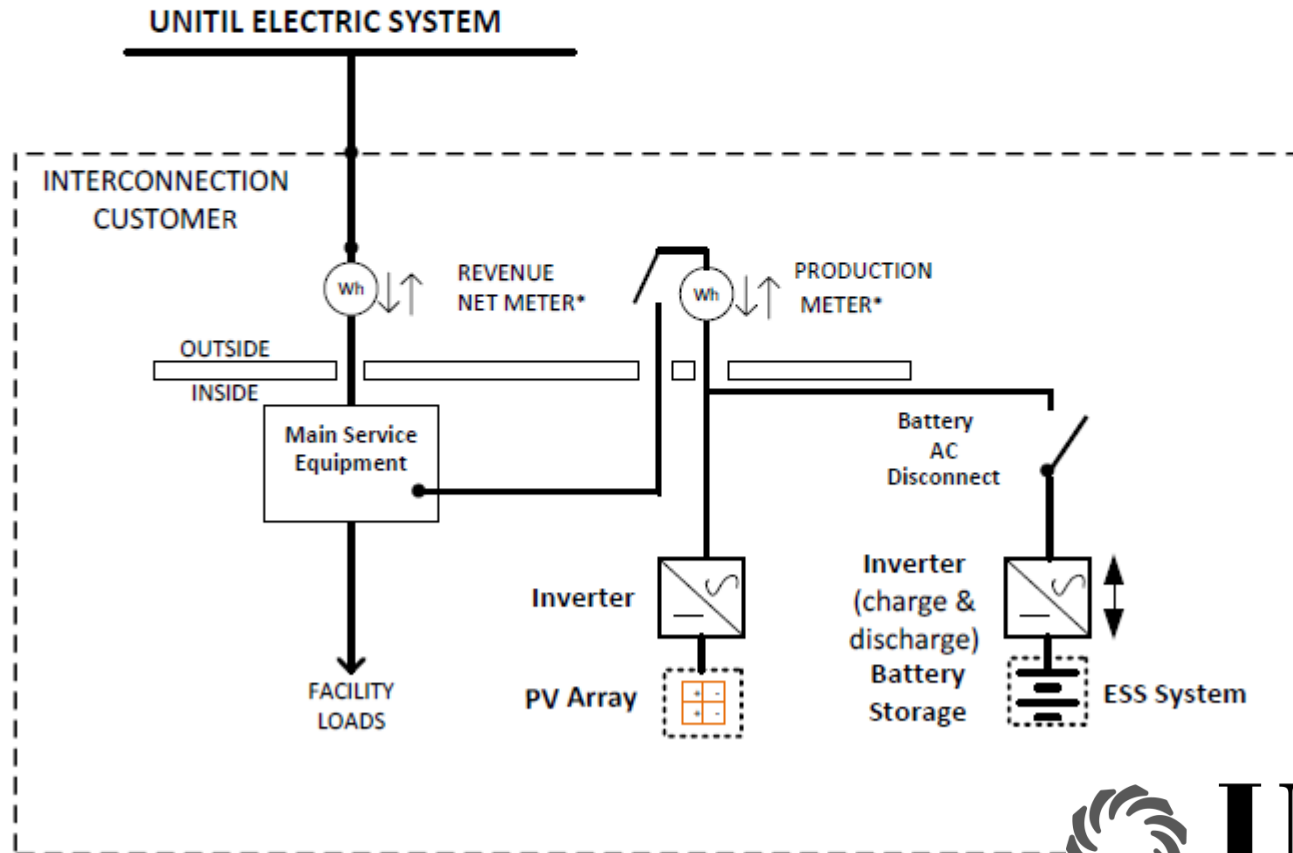
Unitil

MA ELECTRIC OPERATIONS

* Transformer rated metering is require for ratings > 400 amps

Behind the Meter Solar AC Coupled with Storage <= 60 kW

This diagram is representative of a typical system design. All system configurations must be approved by Unitil.



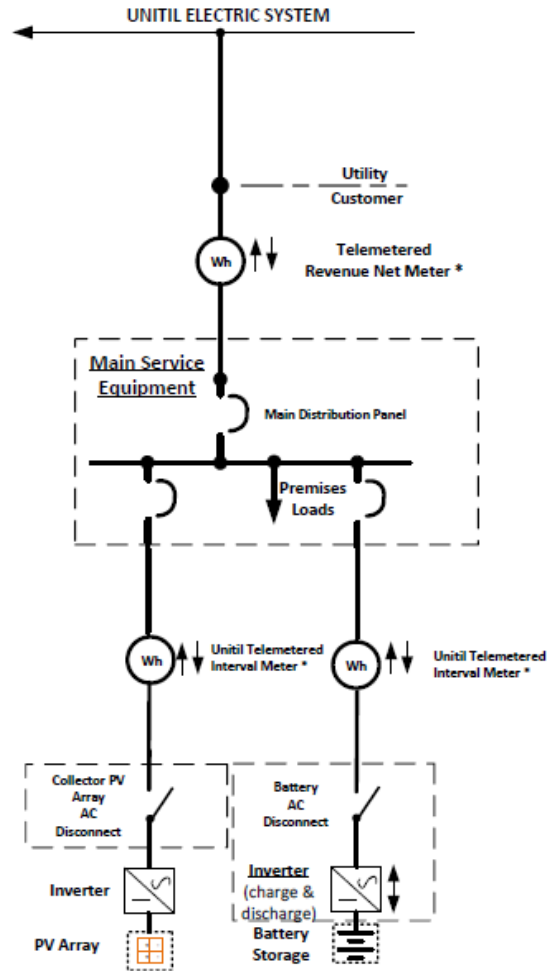
* Transformer rated metering is require for ratings > 400 amps



Unitil

MA ELECTRIC OPERATIONS

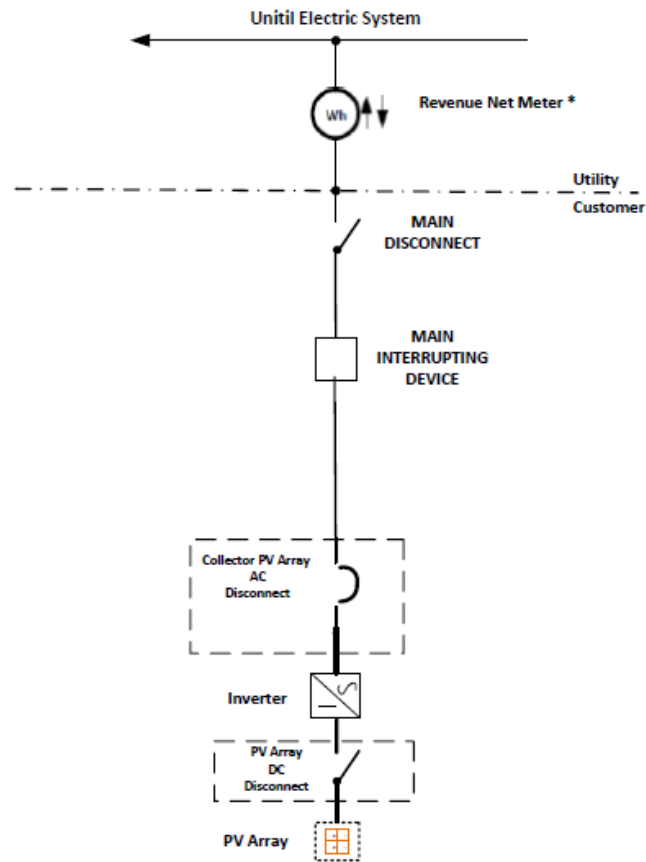
This diagram is representative of a typical system design. All system configurations must be approved by Unitil.



* Transformer rated metering is required for ratings > 400 amps

Stand Alone Solar

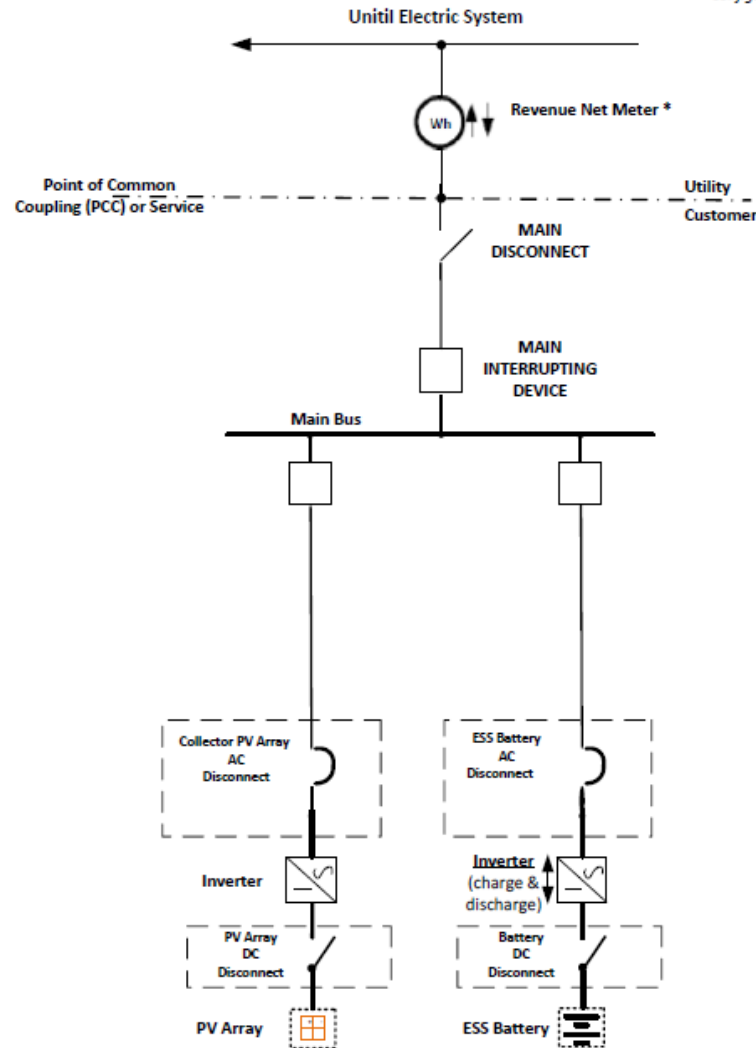
This diagram is representative of a typical system design. All system configurations must be approved by Unitil.



* Transformer rated metering is require for ratings > 400 amps

Stand Alone Solar AC Coupled with
Storage <= 60kW

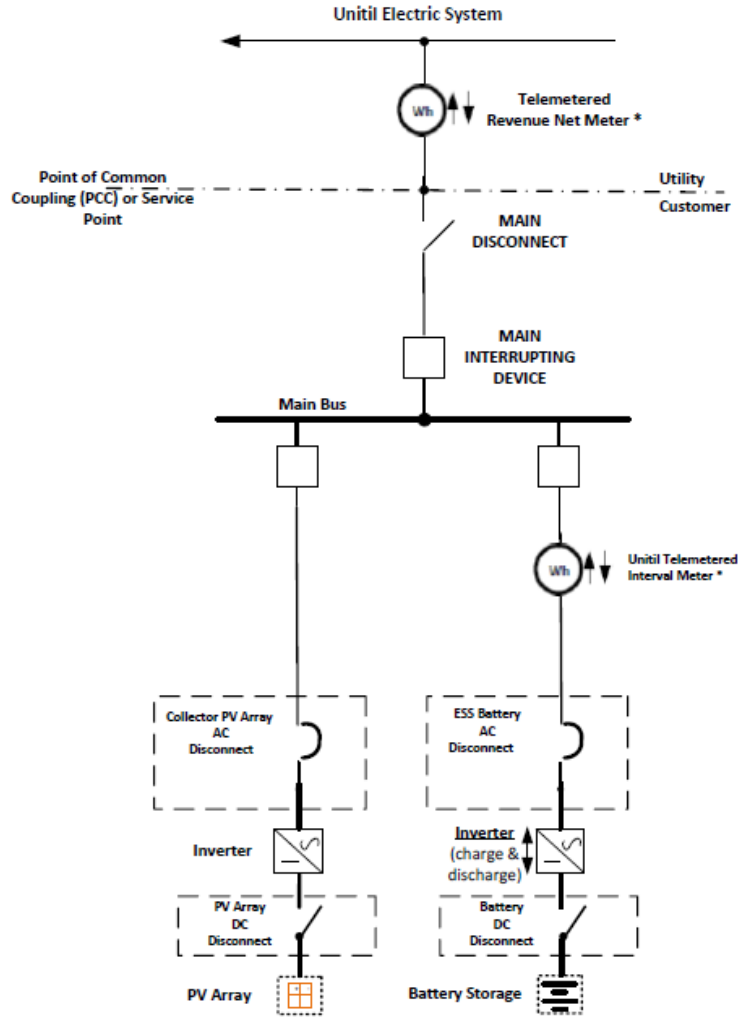
This diagram is representative of a typical system design. All system configurations must be approved by Unitil.



* Transformer rated metering is require for ratings > 400 amps

Stand Alone Solar AC Coupled with Storage > 60kW

This diagram is representative of a typical system design. All system configurations must be approved by Unutil.



* Transformer rated metering is require for ratings > 400 amps

MLP Solar Program

- DOER has collaborated with representatives from the Municipal Light Districts to develop an incentive program
- Incentive program will mainly serve to incentivize residential installations
- Incentives will be in the form of rebates for facilities less than or equal to 25 kW DC
- Similar structure to the Commonwealth Solar Rebate Program
- Class I RECs from participating facilities will be transferred to the MLP for a 10-year period
- DOER expects to issue a Program Opportunity Notice for MLPs and will be posting more information about the program shortly

Other Issues

- The DPU is still considering several issues related to solar and energy storage in DPU 17-146
- At issue in this proceeding are:
 - The continued eligibility of an otherwise eligible net metering facility to net meter when paired with Energy Storage
 - Capacity rights for certain Solar Tariff Generation Units and net metering facilities
- Until a final determination is made in 17-146, *neither* EDCs nor Solar Tariff Generation Unit Owners may claim the right to bid capacity into the Forward Capacity Market

Summary of Important Dates and Actions

Date(s)	Action
October 11, 2018 - October 19, 2018	In person SMART transition stakeholder meetings held throughout Commonwealth
October 16, 2018	EDCs jointly file revised model tariff with DPU
October 24, 2018	SMART Statement of Qualification Application webinar
November 1, 2018	EDCs individually file SMART Factor cost recovery filings with DPU
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TBD	EDCs file company specific SMART tariffs
TBD	DPU approves company specific SMART tariffs
TBD	DPU issues order on 17-146

Resources

- DOER website <https://www.mass.gov/service-details/development-of-the-solar-massachusetts-renewable-target-smart-program>
 - Customer Disclosure Forms
 - [Small System Direct Ownership](#)
 - [Small System Third Party Ownership](#)
 - [Community Shared Solar](#)
 - Guidelines
 - [Statement of Qualification Reservation Period](#)
 - [Definition of Agricultural Solar Tariff Generation Units Guideline](#)
 - [Land Use and Siting](#)
 - [Definition of Brownfield Guideline](#)
 - [Low Income Generation Units Guideline](#)
 - [Energy Storage](#)
 - Behind the Meter Value of Energy Calculator
<https://www.mass.gov/doc/smart-btm-value-of-energy-calculator-0>
- CLEAResult website <http://masmartsolar.com/>
 - FAQ
 - Application Document Requirements
- SMART Program Regulation (225 CMR 20.00)
https://www.mass.gov/files/documents/2017/10/16/225c_mr20.pdf
- SMART Model Tariff (Enter 17-140) <https://eeaonline.eea.state.ma.us/DPU/Fileroom>
- Email with Questions:
 - DOER.SMART@mass.gov
 - MA.SMART@clearesult.com