



# What, Why, and Where?

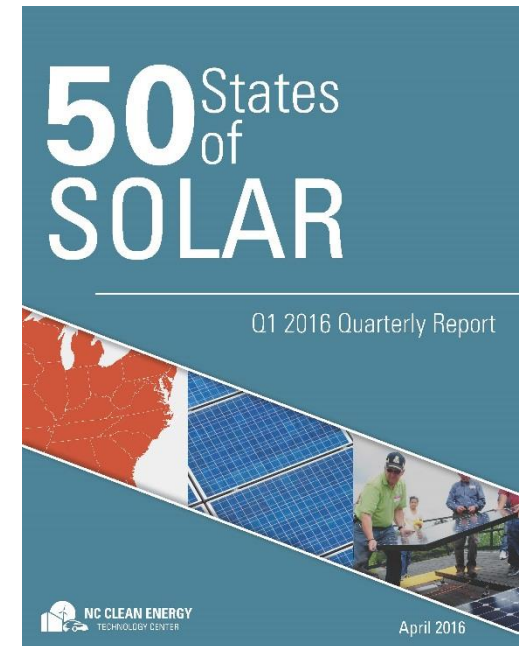
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# About the 50 States of Solar

- Quarterly publication detailing state and utility distributed solar policy & rate design changes
  - Net Metering
  - DG Valuation/NEM Cost-Benefit Studies
  - Residential Fixed Charges & Minimum Bills
  - Residential Demand Charges & Solar Charges
  - Community Solar
  - Third-Party Ownership
  - Utility-Led Rooftop Solar
- Regulatory actions, bills passing at least one chamber
- States, IOUs, public power utilities with >100,000 customers



# Key Terms

- **Net Metering**

- Definition from DSIRE: *For electric customers who generate their own electricity, net metering allows for the flow of electricity both to and from the customer – typically through a single, bi-directional meter. When a customer’s generation exceeds the customer’s use, electricity from the customer flows back to the grid, offsetting electricity consumed by the customer at a different time during the same billing cycle. In effect, the customer uses excess generation to offset electricity that the customer otherwise would have to purchase at the utility’s full retail rate.*
- One-to-one offsetting of production & consumption over the entire billing period

- **Net Billing**

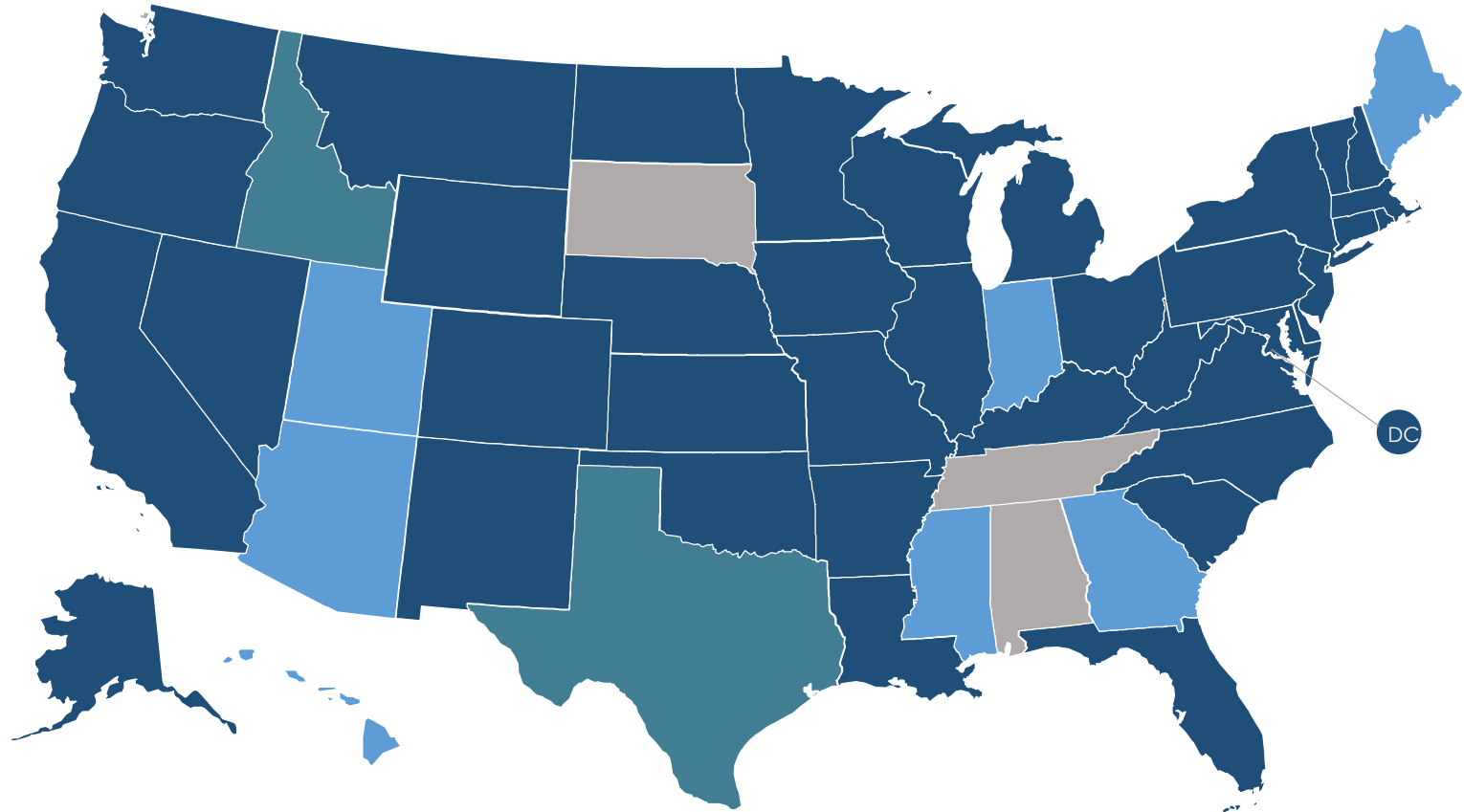
- Electricity produced may be consumed directly on-site (effectively a retail rate credit); excess generation is credited at a separate rate (ex. avoided cost, value of solar)

- **Buy-All, Sell-All**

- Total production is credited at one rate; total consumption is charged at another rate

# Net Metering and Distributed Generation Compensation Policies

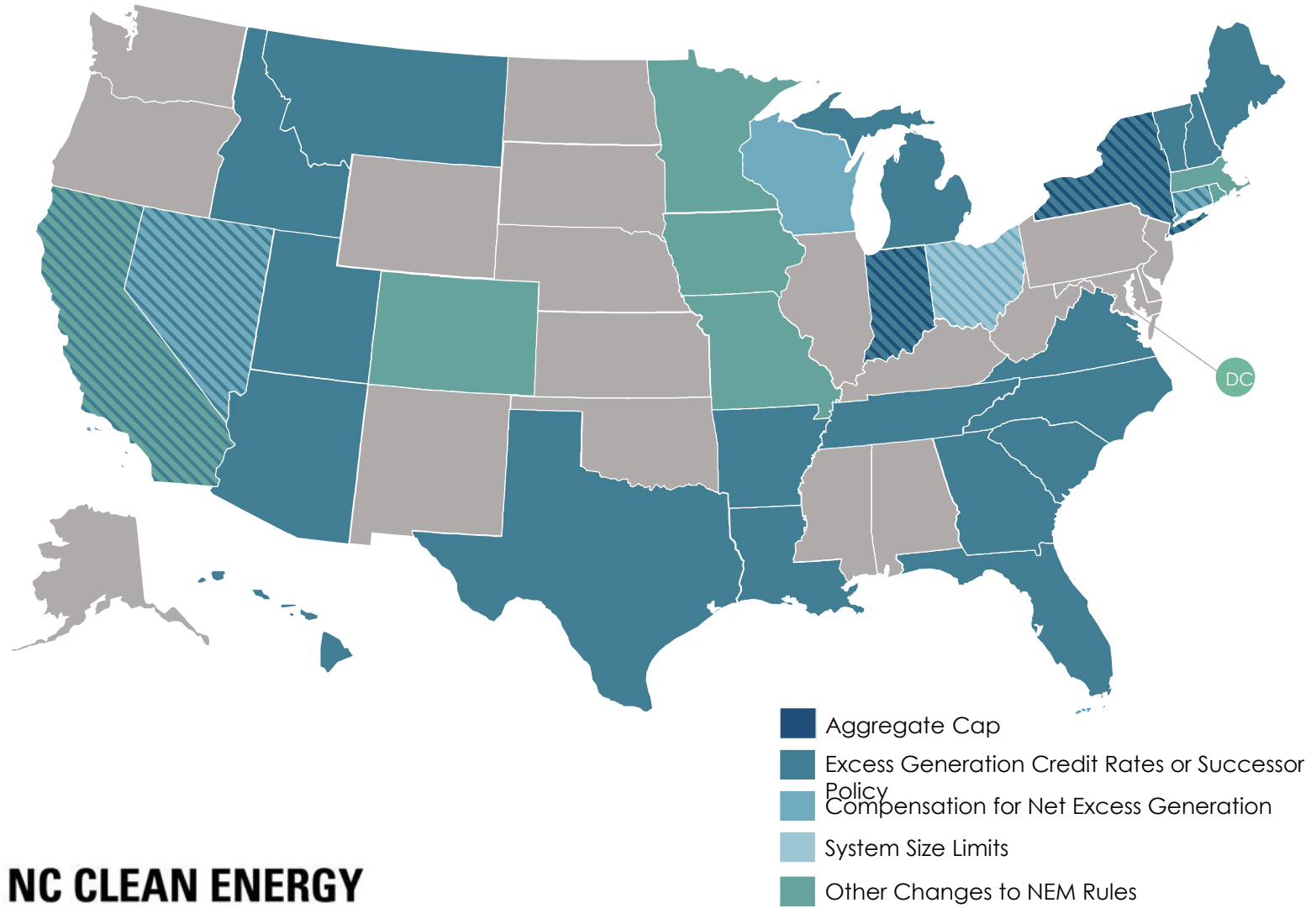
www.dsireusa.org / February 2018



- No statewide distributed generation compensation rules
- Statewide distributed generation compensation rules other than net metering
- No statewide mandatory net metering rules, but some utilities offer net metering
- State-developed mandatory net metering rules for certain utilities



## 2017 Proposed or Enacted Changes to DG Compensation Policies by Type



# Why is NEM in Flux?

Why are changes under consideration?

- **Concerns about cost-shifting**
  - Majority of fixed & demand-based costs for residential customers generally recovered through variable rates; bill reduced through NEM
  - Others suggest benefits of DG negate or reverse cost shift
- **Efforts to become more granular in solar valuation and compensation**
  - NEM is easy to understand, but a rough mechanism
- **Utilities reaching net metering aggregate caps**
  - Sometimes an impetus for considering changes

\*Part of a broader shift occurring in our electric system – from centralized generation, one-way system to diverse, interactive web

\*Policy and regulation designed for the former system

# What Types of Changes are Being Considered?

- Some tinkering with elements of existing NEM policies, but focus is on **NEM 2.0** or **NEM successor tariffs**
- Most states considering successor tariffs have either (1) continued net metering or (2) moved to net billing
- NEM alternatives *usually*:
  - Allow on-site consumption
  - Credit excess generation at a rate other than retail
    - Avoided cost
    - Value of solar/DG
  - Do not include an aggregate cap
- Credit rates are often a sticking point, lots of methodologies



# Arizona



- Three IOUs originally proposed NEM changes in their general rate cases
  - Would reduce credit rate for excess generation, moving to “net billing”
- In Dec. 2016, ACC voted to end NEM, move to net billing, crediting excess generation at avoided cost
  - Existing customers grandfathered for 20 years
  - Rates locked in for new customers for 10 years
- Avoided cost credit rates are being determined in individual utility proceedings
  - APS: settlement approved in Aug. 2017, amended in Sep. 2018
    - \$0.129/kWh → \$0.1161kWh
  - TEP & UNS: Final Decision in Sep. 2018
    - \$0.0964/kWh (TEP), \$0.115/kWh (UNS)

# California



- AB 327 (2013) required CPUC to develop a standard net metering successor tariff
- Jan. 2016: CPUC issued decision on NEM successor tariff
  - Mostly keeps retail rate net metering
  - Transitions to TOU rates
  - Customers required to pay “non-bypassable charges” (~\$0.02-\$0.03/kWh)
- NEM rules to be reviewed again in 2019; discussion already occurring
  - Several options being examined – net billing; buy-all, sell-all; locational pricing, transferable credits



# Connecticut



- SB 9 (2018) transitions from NEM to net billing
  - Compensation rate and netting period to be decided by Commission; either real-time, day, or fraction of a day
- Grandfathering: until 12/31/2039
- Commission opened new proceeding in June 2018

# Hawaii



- October 2015: PUC voted to end net metering in favor of 2 interim options:
  - *Grid-supply option* – credits excess generation at avoided cost. No credit for net excess generation.
  - *Self-supply option* – no export of electricity to grid
- October 2017: PUC approved new tariffs:
  - “*Smart Export*” option – solar + storage only; credit for energy exported to grid during non-daylight hours
  - *CGS+/Controllable Grid Supply* – no storage needed; credit for exports during daytime, and advanced equipment used to manage power from the system

# Indiana



- S.B. 309 enacted in May 2017
  - Ends NEM once aggregate cap of 1.5% summer peak demand is reached, or July 2022 (whichever comes first)
  - Moves to net billing, crediting excess generation at 1.25 x average marginal price of electricity
  - Grandfathering:
    - Customers beginning net metering before end of 2017 are grandfathered for 30 years (until July 2047)
    - Customers beginning net metering before July 2022 are grandfathered until July 2032

# Maine



- **April 2014:** L.D. 1652 directed PUC to study the value of solar
- **June 2015:** L.D. 1263 directs PUC to convene a stakeholder group to investigate an alternative to net metering; stakeholder report submitted in Feb. 2016
- **February 2016:** L.D. 1649 introduced – adopts an alternative to net metering
- **April 2016:** L.D. 1649 is vetoed; veto sustained
- **June 2016:** PUC opens docket to investigate changes to net metering, including authority to implement net metering alternative in LD 1649
- **September 2016:** Rulemaking initiated to change net metering rules; proposed rules published

# Maine



- **March 2017:** PUC adopts new DG compensation rules
  - Buy-all, sell-all; reduces % of production able to be netted against T&D charges by 10% annually
  - Customers grandfathered for 15 years
- **June 2017:** LD 1504 passed – returns to net metering (until 2022, then net billing) and calls for a cost-benefit study
- **July 2017:** LD 1504 vetoed; veto sustained
- **December 2017:** PUC delays credit phase-down until May 2018
- **February 2018:** PUC moves up implementation date for credit phase-down to March 16th

# Michigan



- SB 437 and SB 438, enacted in December 2016, directed the PSC to develop a new DG tariff
- April 2018: PSC adopted new “Inflow-outflow” model (net billing)
  - Excess generation credited at avoided energy and capacity rate
  - Credit rates being determined in utility-specific proceedings



# Nevada



- Dec. 2015: PUCN approved a NEM successor tariff for NV Energy
  - “Net billing” – excess generation credited at avoided cost rate
  - No grandfathering for existing NEM customers
- Sept. 2016: PUCN adopted grandfathering (for solar customers prior to 12/31/2015)
- Dec. 2016: PUCN restored NEM for an additional 6 MW in Sierra Pacific Power territory
- June 2017: AB 405 enacted, restoring NEM
  - NEG rate declines as aggregate capacity thresholds are reached

# New Hampshire



- S.B. 1116 (2016) directed the PUC to develop alternative net metering tariffs
- Two settlements filed
  - Clean energy companies & advocates
  - Utilities, ratepayer advocates
- Decision issued in June 2017
  - Continues net metering, reduces net excess generation rate
  - Initiated a value of DER study, pilots on TOU rates, non-wires alternatives, low-income access
  - PUC found lack of evidence for current cost shift, wanted more data, evidence before making significant changes to policy

# New York



- **Reforming the Energy Vision (REV)**
  - Comprehensive transformation of the state's retail electricity market
- **Value of Distributed Energy Resources (VDER)**
  - March 2017 PSC published NEM transition order
    - Most types of systems
  - Approved initial value stack
    - Energy Value (LMP)
    - Capacity Value
    - Environmental Value
    - Demand Reduction/Locational System Relief Value
  - Order issued in Sept. 2017 implementing value stack
  - Stakeholders continue to consider adjustments

# North Carolina



- H.B. 589, enacted in July 2017, directs utilities to file revised net metering credit rates after investigation of costs and benefits
- Must be non-discriminatory and ensure customer-generators pay full share of fixed costs
- May include fixed and demand charges
- Existing customers (up until new tariff adopted) are grandfathered until 2027

# Utah



- Nov. 2016: Rocky Mountain Power proposed a new tariff for DG customers
  - Reduced energy rate (3.8 cents/kWh)
  - Also proposed a demand charge, increased fixed charge
- Settlement agreement approved in Sept. 2017
  - Creates a transition tariff, taking the form of net billing, crediting excess generation at 9.2 cents/kWh
  - Additional fees not included in settlement
  - New export compensation rate to be determined in separate proceeding

# Vermont



- PSB established a revised net metering program in June 2016, pursuant to Act 99 (2014); final rules implemented in 2017
- New net metering rules:
  - Grandfathering for 10 years
  - Production & consumption netted one-to-one, but credit adjustors applied to gross production
  - Credit Adjustors:
    - REC ownership – transfer (+2 cents/kWh); retain (-3 cents/kWh)
    - Siting & Size:
      - All systems up to 15 kW, systems 15-150 kW preferred sites: +1 cent/kWh
      - Systems >150 kW preferred sites: -1 cent/kWh
      - Systems 15-150 kWh not on preferred sites: -3 cents/kWh

# Questions?

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