

## **Issues with the St George Solar Reliability Charge (SRC)**

### **Background**

St George's Energy Services Division (ESD) is part of the commercial/industrial system that extracts and processes raw materials (e.g., fossil fuels, water, sunlight) to generate electricity and distribute it to end users (homes, businesses/industry and institutions). ESD's part in this system is to seek reliable and responsible sources of electricity at the best value and deliver it through its local distribution system to end users. In general, it does an excellent job.

The issue of "responsible" energy is becoming more important and challenging for all participants in the system. The request to repeal and refund the St George's SRC is an exercise of that responsibility.

### **The Facts (as I understand them)**

1. The dependency of customers generating solar electricity (Solar Customer) on ESD  
Due to the summer temperatures in St George, for practical/economic purposes, Solar Customers must be connected to ESD's infrastructure via a "net meter".
2. Net Metering  
"Net metering" is a physical and business relationship between a Solar Customer and ESD to enable bi-directional flow of electricity between the two. The net meter increments positively when the Solar Customer "pulls" electricity from ESD (when the PV system generates less than the customer's demand), and negatively when the PV system "pushes" electricity to ESD (when the PV system generates more than the customer needs). The state of this push-pull is continuously recorded by the net meter. The Solar Customer is charged monthly whenever the cumulative "pull" total exceeds the "push" total. No charge levied for any electricity pulled from ESD that is offset by electricity that has been pushed to ESD.
3. Solar Reliability Charge (SRC)  
The SRC is intended to compensate ESD for the Solar Customer's use of ESD's infrastructure when electricity is "pulled" by the Solar Customer (when the customer's demand is greater than what is supplied by the PV system). In ESD's logic, without the SRC, the Solar Customer would be using ESD's infrastructure without paying for it. The SRC is calculated based on the total PV electricity generated by the Solar Customer.
4. ESD use of excess PV electricity  
Whenever a Solar Customer's PV system "pushes" electricity to ESD (when it generates more electricity than the customer's instantaneous demand), ESD's local neighborhood infrastructure, through the laws of physics, delivers that electricity to the nearest demand, typically a nearby neighbor. ESD charges that neighbor the full retail price for that electricity, as if it were delivered through ESD's city-wide infrastructure from the grid.

### **Arguments to Repeal and Refund the SRC (as they make sense to me)**

1. Reciprocity for infrastructure use compensation  
The SRC compensates ESD for infrastructure used by the Solar Customer. However, (1) it's based on the electricity the customer's PV system generated rather the electricity the

---

<sup>1</sup> While I am a Solar/Net Meter Customer, my contract with the city pre-dates the SRC. I have no personal stake in the issue. I am by education and profession an Electrical Engineer, Computer Scientist, Systems Engineer and Program Manager, and am a retired Boeing Technical Fellow, airplane systems architect and program manager. I have experience in solar electrical energy generation system design, installation and maintenance.

customer pulled from ESD, which seems incorrect (why should the customer pay ESD for electricity generated by the customer's PV system?), and (2) there is no reciprocated compensation when ESD uses electricity from the Solar Customer's PV system (see item 4 above). A typical "net zero" PV system generates all the electricity used by the Solar Customer on a yearly basis, with a push-pull of electricity between the Solar Customer and ESD, and the amount of electricity supplied by ESD to the Solar Customer equals the amount of electricity supplied by the Solar Customer to ESD (resulting in a "net zero" transaction). Both sides incur infrastructure costs, and those costs should cancel each other. The SRC is an unjustified surcharge since it recognizes only ESD's side of the equation.

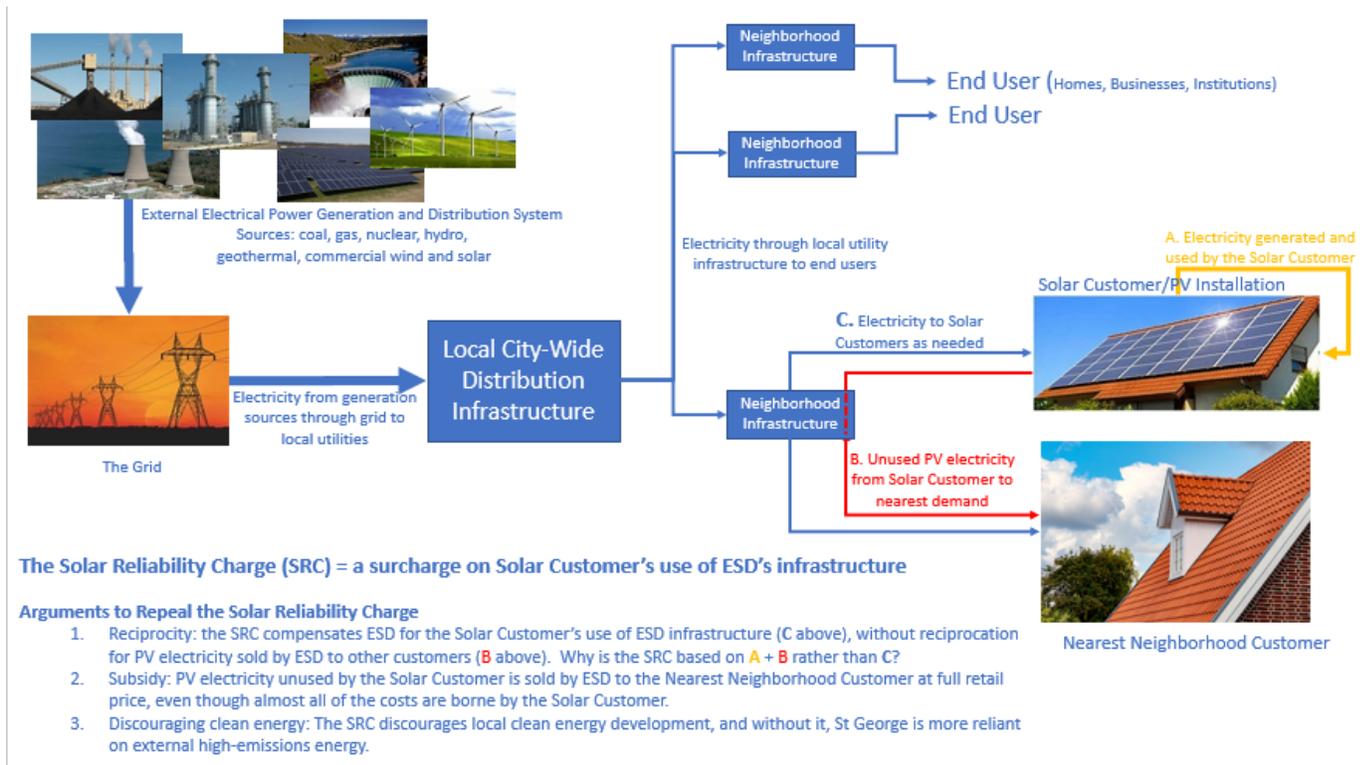
## 2. The Solar Customer's subsidy to ESD

At any instant that the Solar Customer's PV system is generating more electricity than is used, that electricity sent (pushed) to the nearest ESD customer. ESD charges that customer the full retail rate for that electricity, even though only a very small fraction of ESD's infrastructure was used. The vast majority of the infrastructure costs were borne by the Solar Customer. This amounts to an unjustified subsidy to ESD by the Solar Customer.

## 3. Discouraging clean energy

The SRC discourages local clean energy generation, effectively adding 50% to the cost of the Solar Customer's PV system over the systems reasonable lifetime<sup>2</sup>, severely hampering the economics of clean energy. This is opposite the direction Utah has set and that the world must head. The city should be part of the solution rather than add to the problem.

## 4. ESD risks being left behind in the move to distributed energy resources (DER)<sup>3</sup>



**Conclusion:** The SRC is unjustified. If anything, it should be applied in reverse.

<sup>2</sup> Assuming (1) the average residential yearly electricity use in St George is 10,000 kWh/yr, (2) the after-tax cost of a PV system to generate that electricity is \$10,000, and (3) the average ESD charge is \$0.08/kWh, it takes a Solar Customer 12.5 years to break-even. The SRC (at \$0.02328 per kWh over 215 kWh/mo.) would equal \$200/yr. PV systems are generally warranted for 25 years, even though they last much longer, adding \$5,000 to the operating costs and at least 25% to the break-even period.

<sup>3</sup> [DER definition](#)

## Winter 2021 Meeting with Energy Services Division (ESD) – Observations

1. ESD offered no specific issues with the paper (above).
2. When ask for papers describing the technical basis for the SRC, ESD replied that it was just information passed on from conferences. No specific conferences or sources were named, and no written argument was given.  
Note: These electrical utility conferences are frequently supported by the fossil fuel industry which has a stake in suppressing renewable energy generation.
3. ESD’s main argument for the SRC appears to be based on an assumption that ESD must size its infrastructure capacity and available power generation to supply all solar customers all of the time, as if no solar energy is ever generated by solar customers. When questioned on this point, no technical analysis was offered. From an engineering perspective, this appears to be an invalid assumption.
4. There has been some technical analysis indicating utilities are subsidized by solar customers, not the other way around:
  - [The True Value of Solar Power](#)
  - [Consumer Reports – June 2016, How Utilities Are Fighting Back on Solar Power](#)
5. ESD has done an insufficient job of justifying the SRC.