**REC Introductory Statement**

A Renewable Energy Certificate (REC) is a unique, trackable instrument representing the right to claim 1 MWh of Renewable Energy delivered to the grid. The REC process is not controlled by any one organization or group, but can be categorized into 2 major groups;

A *compliance* instrument for state RPS (renewable portfolio standard) compliance. State rules can differ regarding generation type and timing consistent with jurisdictional energy preferences meaning not all RECs are equal, and

A *voluntary* instrument for use to verify corporate renewable consumption claims. The voluntary nature has created a valuable commodity market for RECS. During 2018, corporations announced over 6.5 GW of renewable deals. By 2025 corporate demand is expected to reach 60 GW – reflecting an increase greater than 900% growth in the near future!

Some REC facets are universal, such as; RECs cannot be “used” to make a renewable compliance claim or voluntary consumption claim *more than once*. RECs can be sold “bundled” with an electricity purchase or sold separately “unbundled” from the energy they represent--in effect making the underlying electricity no longer renewable. Due to the 1MWh minimum (without rounding), size criteria, some interested parties (i.e. community aggregation) are currently unable to participate. Without REC retirement, the underlying energy is considered emitting--at “null” or “grid” power emission rates.

**Value chain for REC Standards include:**

**Potential business value from utilizing Distributed Ledger (DL) Technology -**

Improve our capabilities via People, Processes, Information, and Tech

**Transparency:** Distributed ledgers are inherently transparent to the nodes on the network. Transactions are not only processed by the network; they are permanently recorded on a shared ledger. Public government ledgers for expenditures, legislative actions, grants, and government contracts would impose a greater level of accountability.

Greater transparency supports a stronger working relationship with partners; offers greater collaboration potential and efficiencies as partners take advantage of the shared information. “All Can See – All Can Agree”

**Costs:** reduce overhead & admin spend associated with middlemen and intermediaries serving as “double/triple/quadruple” checkers; “funds” tied-up in wait time processing are now freed.

**Processes:** reduce reconciliation & settlement time - from days to minutes; enables IoT devise to participate in transactions (enhanced automation options);

**Security & Trust:** via cryptography and consensus validation assures that only valid users can see / retrieve / use data and reduces risk of collusion and tampering; virtually impossible to counterfeit or change records / data / transactions.

**Standards:** standardization of data and transactions formats. When users join a **DL** network, they (and their computers) agree to a protocol – a format for transmitting data between nodes on a network. By virtue of their participation, users are bound by the data and transaction formats of the network. Not only are the parties communicating in the same “language”, they are sharing a place of record.