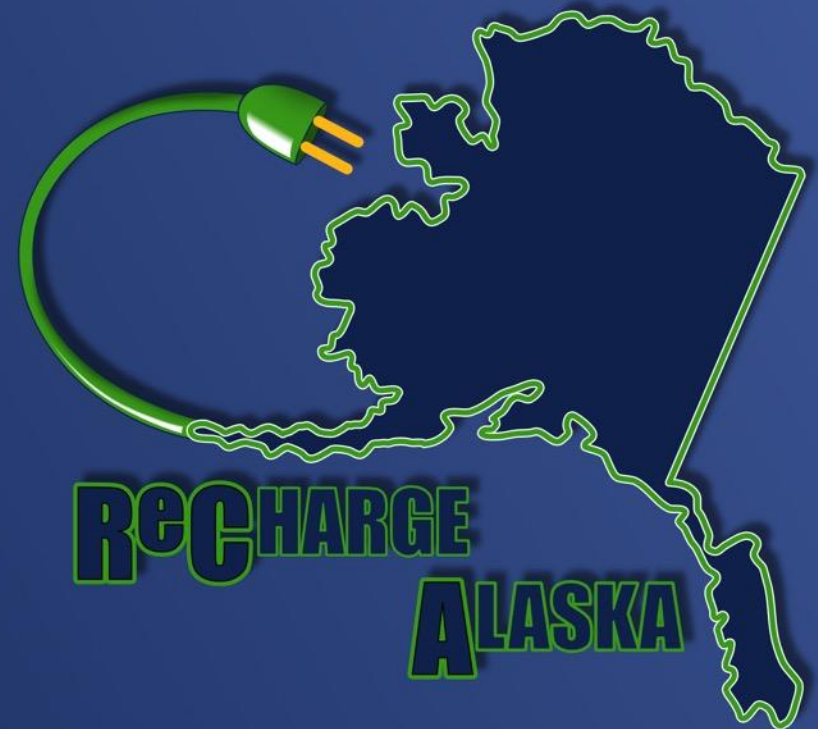
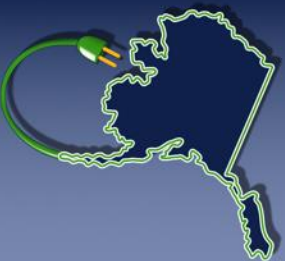


Cantwell, Alaska

Operational 26-July-2021





ReCharge Alaska Goals

1. ✓ Reduce the time to recharge at Cantwell
2. ✓? Solution cannot exceed the Demand Charge for GVEA at 50 kW
3. ✓ Solution needs to be available to the public with 24 hour access
4. Not yet – Solution needs to meet the operating conditions of Cantwell for a permanent deployment
5. ✓ Deploy for public in the summer of 2021



- | | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P |
|----|-------------|---------------|----------------|---------------|---|-------------|-----------|-----------|---|---------|---------------|---------------|---|-------------|-----------|-----------|
| 1 | CANTWELL 4E | | | | | | | | | | | | | | | |
| 2 | Date | Max Temp (°F) | Mean Temp (°F) | Min Temp (°F) | | Date | Temp (°F) | Temp (°C) | | | | | | | | |
| 3 | 1/1/10 | -2 | -11 | -20 | | 30/jan/2012 | -45 | -43 | | Date | Max Temp (°F) | Min Temp (°F) | | | | |
| 4 | 1/2/10 | 10 | -9 | -28 | | | | | | 1/1/01 | 24 | 15 | | Date | Temp (°F) | Temp (°C) |
| 5 | 1/3/10 | -5 | -17.5 | -30 | | | | | | 1/2/01 | 16 | -3 | | 12/jan/2005 | -47 | -44 |
| 6 | 1/4/10 | 15 | 4 | -7 | | | | | | 1/3/01 | 9 | 2 | | | | |
| 7 | 1/5/10 | 24 | 19 | 14 | | | | | | 1/4/01 | 7 | -3 | | | | |
| 8 | 1/6/10 | 22 | 18 | 14 | | | | | | 1/5/01 | 4 | -10 | | | | |
| 9 | 1/7/10 | 24 | 21 | 18 | | | | | | 1/6/01 | 28 | -4 | | | | |
| 10 | 1/8/10 | 23 | 10.5 | -2 | | | | | | 1/7/01 | 38 | 24 | | | | |
| 11 | 1/9/10 | 0 | -5 | -10 | | | | | | 1/8/01 | 37 | 23 | | | | |
| 12 | 1/10/10 | -10 | -15 | -20 | | | | | | 1/9/01 | 30 | 6 | | | | |
| 13 | 1/11/10 | -20 | -28 | -36 | | | | | | 1/10/01 | 6 | -1 | | | | |
| 14 | 1/12/10 | -17 | -26.5 | -36 | | | | | | 1/11/01 | 21 | -16 | | | | |
| 15 | 1/13/10 | 4 | -6.5 | -17 | | | | | | 1/12/01 | 29 | 20 | | | | |
| 16 | 1/14/10 | 7 | 5 | 3 | | | | | | 1/13/01 | 31 | 16 | | | | |
| 17 | 1/15/10 | 9 | 6 | 3 | | | | | | 1/14/01 | 39 | 30 | | | | |
| 18 | 1/16/10 | 5 | 1.5 | -2 | | | | | | 1/15/01 | 41 | 26 | | | | |
| 19 | 1/17/10 | 20 | 9 | -2 | | | | | | 1/16/01 | 26 | -1 | | | | |
| 20 | 1/18/10 | 20 | 12.5 | 5 | | | | | | 1/17/01 | 36 | -2 | | | | |
| 21 | 1/19/10 | 24 | 8.5 | -7 | | | | | | 1/18/01 | 37 | 29 | | | | |
| 22 | 1/20/10 | 7 | -1 | -9 | | | | | | 1/19/01 | 40 | 26 | | | | |
| 23 | 1/21/10 | 2 | -9 | -20 | | | | | | 1/20/01 | 29 | 6 | | | | |
| 24 | 1/22/10 | 6 | -7 | -20 | | | | | | 1/21/01 | 27 | 2 | | | | |
| 25 | 1/23/10 | 7 | -4 | -15 | | | | | | 1/22/01 | 33 | 13 | | | | |
| 26 | 1/24/10 | 7 | -3 | -13 | | | | | | 1/23/01 | 27 | 7 | | | | |
| 27 | 1/25/10 | 8 | 0.5 | -7 | | | | | | 1/24/01 | 28 | 12 | | | | |
| 28 | 1/26/10 | 0 | -3.5 | -7 | | | | | | 1/25/01 | 28 | 16 | | | | |
| 29 | 1/27/10 | 9 | 3 | -3 | | | | | | 1/26/01 | 33 | 11 | | | | |
| 30 | 1/28/10 | 14 | 4.5 | -5 | | | | | | 1/27/01 | 34 | 22 | | | | |
| 31 | 1/29/10 | 23 | 15.5 | 8 | | | | | | 1/28/01 | 25 | -11 | | | | |
| 32 | 1/30/10 | 20 | 12 | 5 | | | | | | 1/29/01 | 29 | -2 | | | | |



Procurement

- RTM75 was ordered January-2021
- RT50 was ordered June-2021
- Site Materials were installed in November-2020

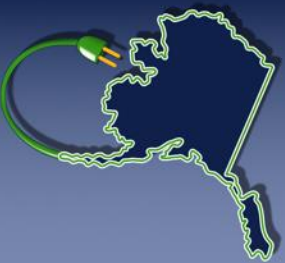




Installation

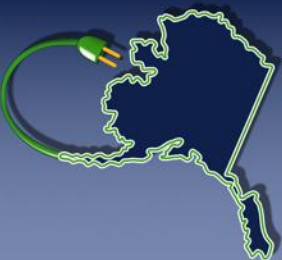
- Installation was by Vannoy Electric and the Site Host, Kirk Martakis.
- Quick installation process.





Commissioning

- RT 50 received in "Free Vend" mode
- Test Vehicles
- Communications
- **DEMAND**



Data-Data-Data

Exhibit 1

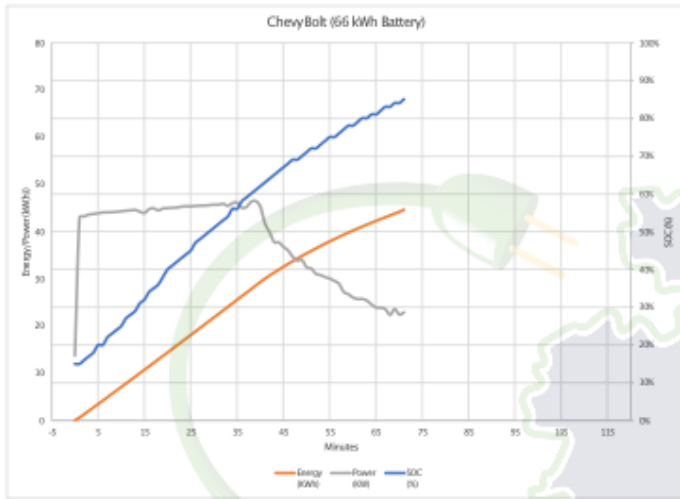


Exhibit 2

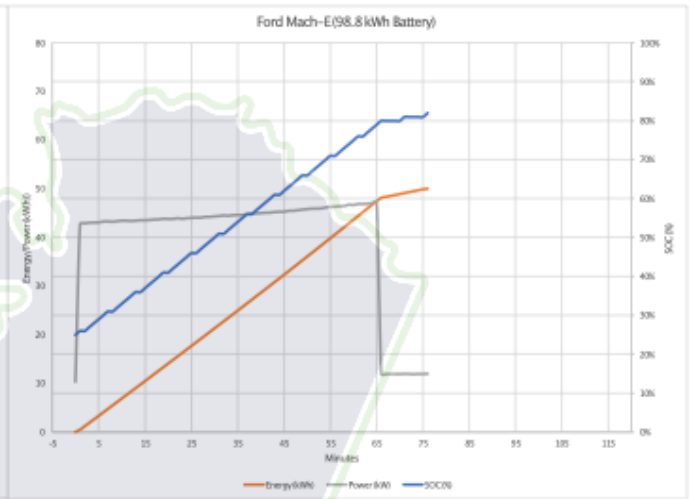


Exhibit 3

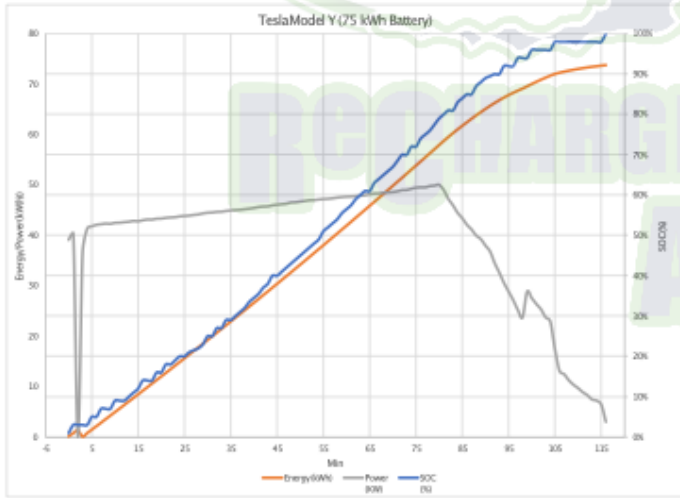
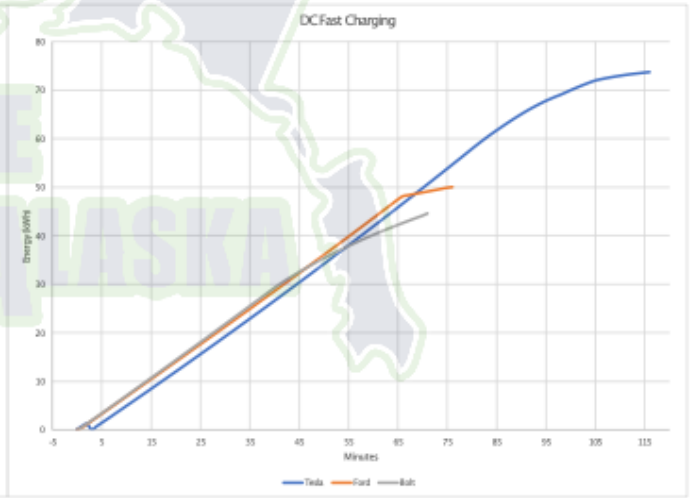
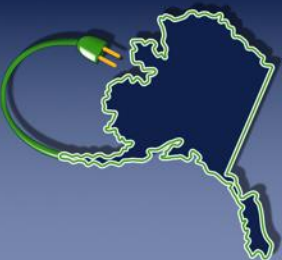


Exhibit 4





Lessons Learned

1. Procurement in 2021 is difficult to estimate
 - Material costs are super volatile
 - Costs are going to be higher than planned
2. Site Host
 - Amenable site hosts are the best to work with especially in the face of our challenges at this location
3. Tesla to CHAdeMO adaptor (dongle life)
4. Site Communications
5. Misassumptions on the amount of control over the machine



More Work

- Winter preparations
 - Enclosure & heater system
 - Tri-Van or AK Supply
- Site #2
 - GVEA region, let the vetting begin

