



 Prime | 2016

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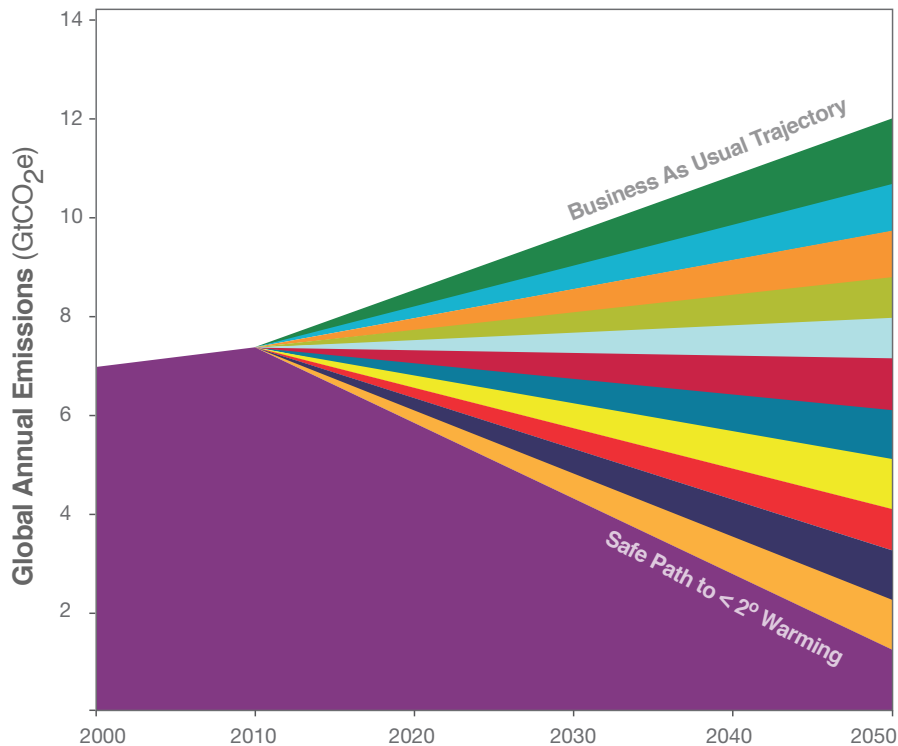
**This investment will support the development of a meter collar that enables solar and other renewable resources to connect to the grid cheaply, safely, and rapidly, which enables the replacement of fossil fuel power with renewable power.**

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The vast majority of today's power system is fueled by coal and natural gas, resulting in excess emissions of greenhouse gases that accelerate climate change. While distributed renewable power systems hold promise to combat this problem, they are often difficult to connect to the grid. ConnectDER has developed a versatile "meter collar" that enables a home solar system to get connected to the grid in under ten minutes, eliminating the need for complex and dangerous electrical engineering work (and saving between \$500-3,000 per installation). The smart version of the collar also enhances grid stability by allowing utilities to efficiently control the output of the distributed energy resource. ConnectDER is raising \$2MM, which will finance several key hires, enable the optimization of the second generation collar for contract manufacturing, and provide the working capital necessary to fill larger orders. The ConnectDER collar is already being used by utilities to provide solar to low-income customers in the U.S.; the company expects that its cost savings will continue to help open up the market for distributed solar.

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## Climate Impact Potential



### Strategies to Reduce Emissions by 1 Gt CO<sub>2</sub>e per year by 2050

-  Create alternative travel methods or decrease travel miles
-  Increase electrification of transportation sector
-  Increase use of alternative transport fuels (e.g. biofuels, hydrogen)
-  Increase building or industrial energy efficiency
-  Increase carbon efficiency of fossil-fuel based transport
-  Increase carbon efficiency of fossil fuel power plants
-  Fuel switch from coal to lower carbon fuels
-  Sequester CO<sub>2</sub> from fossil fuel-fired power plants
-  Increase electricity production from nuclear technologies
-  **Increase electricity production from renewables technologies**
-  Increase abundance or capacity of natural carbon sinks
-  Target

This analysis is adapted from the Princeton University Carbon Mitigation Initiative's Stabilization Wedges.

**This company furthers progress towards reducing emissions by 1 GT C/Y by 2050**  
by increasing electricity production from renewables.



### Environmental Issue



#### Enabling the adoption of distributed renewable energy sources

The environmental sustainability of power systems around the world could be increased through the widespread adoption of distributed power resources, such as rooftop solar (Akorede and Poursmaeil, "Distributed Energy Resources and Benefits to the Environment," Renewable and Sustainable Energy Reviews, October 2009). By producing electricity where it's used, distributed power sources eliminate power losses due to transmission and reduce the need to "over produce" at centralized fossil fuel power plants. Further, distributed residential and commercial solar installations reduce the grid's dependency on fossil fuel for power generation.

Unfortunately, distributed power systems face many barriers to adoption, including 1) the cost and difficulty of connecting a system to the grid, and 2) electric utility and grid manager objections that distributed resources destabilize the system due to the lack of utility visibility and control over the power production of distributed resources, and loss of ratepayer revenue (2007 US Department of Energy report, "The Potential Benefits of Distributed Generation and Rate-Related Issues That May Impede Their Expansion). ConnectDER's meter collar technology works to address these problems by dramatically reducing the upfront cost of distributed energy resources, and by providing utilities real-time control over distributed power resources. Thus the meter collar will act as a lever to accelerate the deployment of distributed energy resources, increasing the carbon efficiency of the grid and providing greater access to on-site renewable generation.

### Direct Charitable Impacts



#### Protects natural resources

ConnectDER's technology has the potential to directly mitigate harmful environmental practices in the following manner:

- **Land – reduces environmental damage and pollution due to fossil fuel extraction.** By enabling the deployment of distributed renewable energy resources, ConnectDER's technology eliminates the need to produce extra power to make up for power lost through long-distance transmission and distribution, and directly replaces fossil fuels with renewable power generation. This results in decreased demand for fossil fuel extraction. The extraction of coal, gas, and oil exacts a heavy environmental toll, from the direct destruction of natural habitat through practices like strip mining and infrastructure building in remote and pristine areas, to accidental environmental contamination through chemical spills and leaks.
- **Air – reduces pollution from fossil fuel combustion.** The replacement of fossil fuel with renewable power decreases air pollution associated with centralized fossil fuel power plants. In addition to accelerating climate change, power plant air emissions also harm the health of nearby residents and workers.



#### Lessens the burdens of government

ConnectDER's technology has the potential to lessen the burdens of government in the following manner:

- **Subsidies:** ConnectDER's technology reduces the cost of distributed energy sources, decreasing reliance on government subsidies to drive deployment.
- **Critical Infrastructure:** ConnectDER's meter collar enables the widespread deployment of low-cost and highly-managed distributed energy resources, increasing the resiliency of the grid.

### Indirect Charitable Impact from Climate Change Mitigation

Because this company helps to mitigate climate change, it also has indirect impacts on existing charitable purposes.



#### Promotes human health

Reduces pollution from fossil fuels and spread of disease



#### Alleviates poverty: natural disasters

Mitigates frequency and severity of natural disasters, which disproportionately affect the poor



#### Defends human rights

Protects communities most vulnerable to climate change effects



#### Combats community deterioration

Mitigates sea level rise and resource degradation



#### Protects the natural environment

Prevents ecosystem degradation and species extinction



#### Lessens the burdens of government

Reduces strain on infrastructure and need for climate-related assistance