

Climate Solver 2016 Honoree
100 percent emission-free car and ridesharing
Developed by: EkoRent

INNOVATION

More than half of the world's population lives in cities. And those numbers are growing: Urban populations are expected to double from the current 3.5 billion to 6 billion by 2050. With surging numbers of people living in cities, traffic congestion goes up and so does air pollution from which more than 5.5 million people worldwide are dying prematurely every year.

It's a trend that shows no signs of slowing. Because as the world becomes wealthier, people tend to buy private cars. To get the most out of their money, many turn to low-cost and less environmentally sustainable car models. For now, the price tag of electronic vehicles is out of range for most people. As a result: Road transport (both public and private) contributes about one-fifth of the EU's total emissions of carbon dioxide (CO₂), the biggest greenhouse gas. While these emissions fell by 3.3 percent in 2012, they are still 20.5 percent higher than in 1990.

In Finland, the average car owner drives only 42 kilometers per day and the car is idle for about 97 percent of the time. For people living in urban areas, financing and maintaining and parking a vehicle adds up to hundreds of euro a month. And for consumers who care about the environment, the contribution cars make to CO₂-emissions makes driving standard vehicles even less attractive.

There's a reason why the "O" in EkoRent's logo depicts a power button. That's because the company's car rental and sharing service is 100 percent electric, and therefore CO₂ emission free when the electricity comes from renewable energy sources. It's the first and the largest company of its kind in Finland. Their tagline is "Go places. With clear conscience." EkoRent allows that and helps drivers save money and the hassles associated with car ownership.

The company created a service experience that's easy to use. Cars are located and rented using a mobile app that shows how far a vehicle can be driven before the next charge is needed. EkoRent's pricing mode is based on hourly use and includes unlimited mileage, built-in navigation, insurance, charging and free parking at EkoRent service stations. Rates start at as low as eight euro an hour. EkoRent opened a number of centrally located service stations in Finland during 2014. And will continue adding new stations and expanding their fleet in the future.

To help keep their fleet in shape, EkoRent shares “Six Golden Rules” for their member drivers. Those include treating the car like it’s your own and keeping it neat inside. Not smoking, eating or transporting pets. And reporting any damage to the vehicle.

BENEFITS

According to ZipCar (the largest car sharing company in the world), one shared vehicle reduces up to 15 private vehicles. The CO2 reductions of a single EkoRent electric vehicle is comparable to 30 private cars each. With 10 EkoRent cars, the CO2 reductions annually would be 14,425 tons. If their electric vehicles sharing system and car rental reaches a 30 percent market share, about 11 million tons of CO2 would be avoided annually.

ABOUT THE COMPANY

Based in Helsinki, Finland, EkoRent is the first rental company in Finland to offer affordable, easy-to-use and zero-emission short term car rental service with 100 percent all -electric fleet.

TEAM

Juha Suojanen is the founder and CEO of EkoRent. He has extensive experience in the ICT industry. Juuso Lindgren is CTO and has a background in electric vehicles and clean energy. Jesse Hietanen is operations director for EkoRent and is responsible for sourcing and training local operations managers.

Climate Solver 2016 Honoree
Creating new ways to produce cellulose fibers
Developed by: The Infinited Fiber Company

INNOVATION

In fashion, there's an ugly side to looking beautiful: Namely 70 million tons of waste contributed to landfills around the world annually with 20 million tons of that coming from Europe alone. For a sector that demands "the latest looks" that can translate into an unceasing consumption of virgin resources. Nurturing source materials like cotton creates its own environmental downward spiral: Cotton growers apply 25 percent of all insecticides globally and use 20,000 liters of water for just one kilo's yield.

The Infinited Fiber Company's goal is to revolutionize the fashion world by changing the wasteful nature of clothing manufacture. They have developed a process technology that can turn textile and paper waste into new fibers for the textile industry. And not just once, but infinitely—without decreasing the quality of the fiber. For fiber manufacturers, this results in improved margins. And the technology rids the value chain of carbon disulfide—the most challenging, hazardous and biologically harmful chemical in the fashion industry. Infinited Fiber is also flexible and can be integrated into existing pulp, dissolving pulp and viscose fiber plant.

The quality of Infinited Fiber is on par with viscose and cotton, so the usage potential of it is significant. And the manufacturing process involved in producing the fiber is significantly more ecological compared to alternatives, like viscose manufacturing. The company recently established a pilot factory in Espoo, Finland that allows continuous development and integration of new recycling. And will produce 50,000 kilos of new natural fibers by starting end of 2016. In the meantime, the company is working with several of the world's largest fashion brands to test Infinited Fiber in their production.

BENEFITS

Infinited Fiber reduces the usage of virgin natural materials and endangered and ancient forests because 30 percent of viscose comes from these trees. It also decreases textile waste in landfills. Infinited Fiber can replace cotton in a number of applications—and doing that saves water (20,000 liters are used per 1 kg cotton) and pesticides. Cotton producers are the source of 25 percent of all insecticides used globally. If the company's approach could recycle 25 percent of the cotton and viscose textile currently placed in landfills or thrown in the garbage and substitute another 25 percent of the cotton used for textiles with wood pulp, the emission reduction would be 14.2 million tons of CO₂ annually by year 2026. When using recycled paper as feedstock the emissions savings will be even greater.

ABOUT THE COMPANY

Located in Espoo, Finland, The Infinited Fiber Company provides technology for the fashion industry to manufacture Infinited Fibers®; from fashion waste and biomaterials like wood or recycled paper.

TEAM

Petri Alava is CEO and founder of Infinited Fiber. Ali Harlin serves as Chief Technology Officer. Kalle Määttä is the company's Chief Marketing Officer.

Climate Solver 2016 Honoree
Offering solar energy below grid parity
Developed by: Solnet Green Energy

INNOVATION

Solnet Green Energy is on a mission to help businesses save energy cost and reduce their carbon footprint. They do that by generating clean renewable energy locally. Providing power well below grid parity. The company takes full responsibility for planning, installing and operating solar plants. All maintenance, repairs, updates and cloud-based data services are part of the service with no additional cost to the customer.

The company's smart solutions drive visibility into the energy purchasing process and feature detailed information from utilities so users can buy energy from the grid when demand is at its lowest. All of Solnet's solutions are enhanced in terms of both product and storage. So each individual panel has its own power optimizer which results in higher annual yield. In the event of a panel malfunction, there are redundancies built into the system to prevent a grid-wide outage.

Solnet's focus is in the B2B market: Municipalities and companies that consume significant amounts of energy in industries like manufacturing, retail and logistics. Or with companies that have critical power balancing needs like datacenters and hospitals.

One of Solnet's recent project wins is the K-citymarket in Tammisto, Finland, which began construction in May of this year. K-citymarket will be the largest property-specific solar utility installation in the country with around 1,600 solar panels on the roof, generating 503kWp. When the power is highest during sunny summer days, the solar utility will cover around half of the property's electricity consumption.

BENEFITS

Solnet improves the energy efficiency of its customer by providing locally produced solar energy combined with storage solutions, helping them reach ambitious targets for efficiency and emission reductions. If the Solnet approach expands the solar PV market in target countries by 10 percent, the annual CO2 emission savings would equal 25.4 million tons by the year 2026.

ABOUT THE COMPANY

Headquartered in Helsinki, Finland, Solnet Green Energy is a Finnish service company that focuses on renewable energy generation, offering solar energy solutions that are cost-effective and readily

installed. The service enables the establishment of solar energy for customers without high initial investments or long-term capital commitment.

TEAM

In addition to the founding partners Arttur Kulvik and Kaj Kangasmäki, the team behind the company includes former members of Neste Oyj management: Tapio Alvesalo, D. Sc. (Tech.), who is a pioneer in the Finnish solar energy sector. Tapio Alvesalo, founder of Naps International, a company that develops and markets solar energy systems.