EV Regenerative Acceleration 2025

A Game-Changing Advance in Electricity Generation, Electric Vehicle Energy Generation and Vehicle Propulsion

By Thane C. Heins, Founder, Thane Heins Energy Inc.
In collaboration with the University of Ottawa, Department of Electrical Engineering

Abstract

Electric vehicles (EVs) have long relied on regenerative braking to recapture a portion of energy lost during deceleration. While beneficial, this process is inherently limited to non-propulsion states. In contrast, EV Regenerative Acceleration introduces a new propulsion paradigm—enabling electrical energy to be generated during acceleration without opposing vehicle motion.

Developed in partnership with the University of Ottawa and protected under U.S. patent law, the ReGenX Generator represents a disruptive yet enhancing leap in EV design, offering an opportunity to eliminate range anxiety, downsize batteries by over 80%, while eliminating dependence on external charging infrastructure.

Introduction

The EV market is undergoing a period of exponential growth, driven by environmental regulation, innovation, and consumer demand. Yet, the largest barriers to full-scale EV adoption remain:

- Limited driving range
- Long charging times
- High battery cost, size, and weight
- High EV purchase price
- Unsustainable component minimg and manufacturing processes

While incremental improvements in battery chemistry and drivetrain efficiency have been made, a foundational leap in how energy is generated and utilized in EVs has remained elusive—until now.

What Is EV Regenerative Acceleration?

EV Regenerative Acceleration is a patented propulsion method that enables electricity to be generated during vehicle acceleration without applying an electro-mechanical load to the motor. This is a radical departure from the traditional regenerative braking model, where energy is only recovered while slowing the vehicle.

At the heart of this innovation is the ReGenX Generator, an intelligent coil-based system that allows positive work (vehicle kinetic energy increase) and electrical energy generation to occur simultaneously—and without the resistive losses (negative work / kinetic energy reductions) of traditional Faraday generators in uses globally since 1834.

Technology Overview

The ReGenX Generator

- Time-Delayed Electromagnetic Field Energy Harvesting Generator Coils are energized and they eliminate and reverse Electromagnetic Field Energy drag.

- Reversal of Lenz’s Law of Induction
  Traditional Faraday generators obey Lenz’s Law of Induction, performing Negative Work while resisting motion. The ReGenX Generator inverts this Electro-dynamic Effect, contributing Mechanical Torque to the EV's drive system.

- Zero Mechanical Load Energy Generation
  Electricity is produced without opposing or slowing the rotor or the vehicle. This creates infinite efficiency electricity generation and EV propulsion under specific conditions, as the energy generation process does not subtract from system energy.

Scientific Breakthroughs

The system challenges long-standing principles in electromagnetism by demonstrating:

- That created and Time Delayed Electromagnetic Field Energy can be harnessed in order to perform positive work, not just negative work.
- That a generator can produce power without a Counter Electromagnetic Torque / Electromagnetic resistance under carefully controlled induction timing.

Laboratory testing at MIT and the University of Ottawa, including independent international validation trials, have confirmed these properties under load and operational conditions.

Commercial Readiness

- Patent Portfolio:
  U.S. and international patents granted and pending, securing core IP globally.
- Industrial Prototypes:
  Generators have been tested at commercial scale with motor manufacturers and renewable energy partners.
- EV Integration:
  Pilot integration underway with early-adopter EV OEMs for next-generation electric drivetrain applications.
- Scalable Licensing Model:
  Licensing opportunities available for motor/generator OEMs, EV manufacturers, and microgrid developers.

Economic & Environmental Impact

Metric	Traditional EV	EV with Regenerative Acceleration
Battery Size	Large (50 –100 kWh)	Up to 80% smaller
Plug-in Charging Requirement	Mandatory	Eliminated
Range per Charge	Limited	Unlimited
Generator Drag on Motor	High	Zero or Positive Torque Assist
Operating Efficiency	Less than 100% Bound by Lenz’s Law and Conservation of Energy and First Law of Thermodynamic laws	Infinite Oersted's Law of Creation of Energy and Oersted's First Law of Thermodynamics for Electrodynamic Systems

The EV Regenerative Acceleration innovation supports a major reductions in:

- Lithium and cobalt demand
- Battery production emissions
- Grid charging infrastructure stress
- EV operating and lifecycle costs

Investor Opportunity

Thane Heins Energy Inc. technologies is currently welcoming strategic capital and licensing partners to:

- Finalize EV powertrain integration with OEM partners
- Scale manufacturing internationally
- Expand new IP portfolio and enforce licensing
- Accelerate commercialization across EV, ICE, off-grid, and industrial sectors

Why Invest Now:

 First-mover advantage in a multi-trillion-dollar industry

 Patented, peer-reviewed, and validated innovations

 Proven ability to disrupt and enhance multiple markets (EV, ICE, grid, industrial)

 Aligned with global sustainability and electrification trends

 Multi-sector licensing potential

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Conclusion

EV Regenerative Acceleration is not merely an upgrade—it is a fundamental rethinking of how electrical and kinetic energy can interact in electromagnetic motion systems. For the first time, vehicles can accelerate and generate power concurrently without compromise.

With its patents secured, prototype testing completed, and commercial partnerships underway, Heins Technologies is poised to redefine energy generation and unlock extraordinary value—for consumers, the planet, and visionary investors.

Contact

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EV Regenerative Acceleration Patent:
https://patents.google.com/patent/US20140111054A1/en

EV Regenerative Braking

Is Negative Work that is performed with created Electromagnetic Field Energy which produces a Counter Electromagnetic Torque (TG) which resists the rotation of the EV's generator during battery recharging which reduces the Kinetic Energy of the EV.

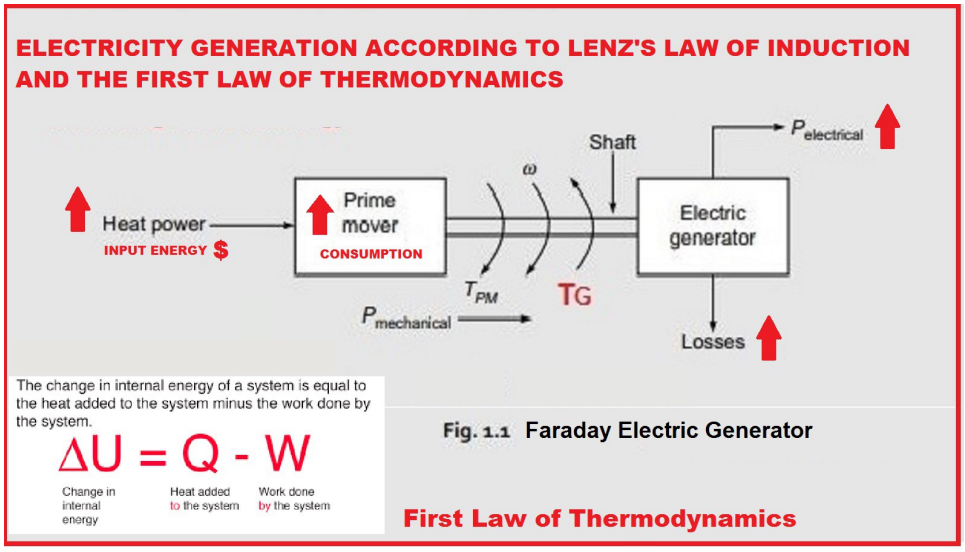


Fig. 1.1 Faraday Electric Generator

EV Regenerative Acceleration

Is Positive Work that is performed with created and Time Delayed Electromagnetic Field Energy which produces a Complementary Electromagnetic Torque (TG) which assists the rotation of the EV's generator during battery recharging which increases the Kinetic Energy of the EV.

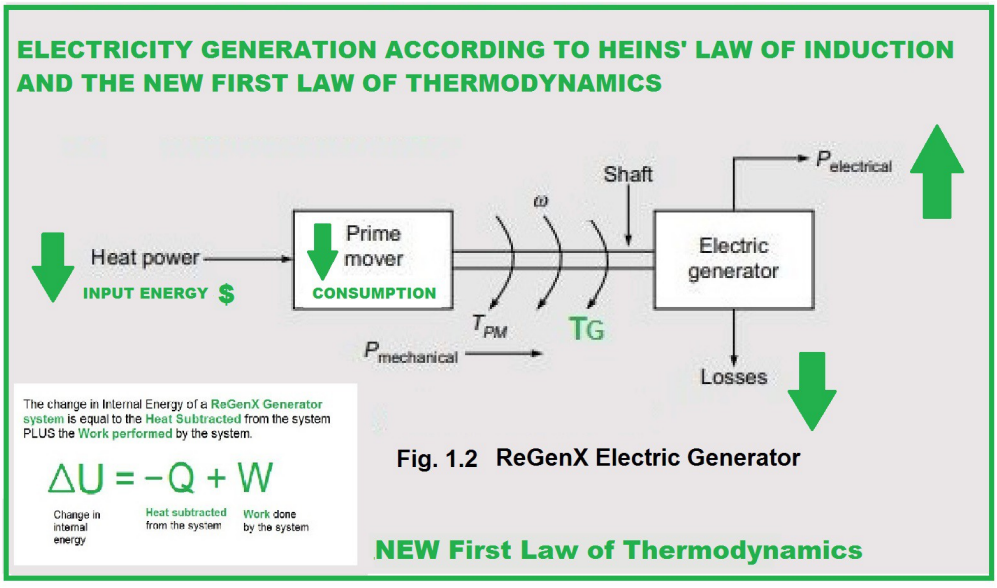
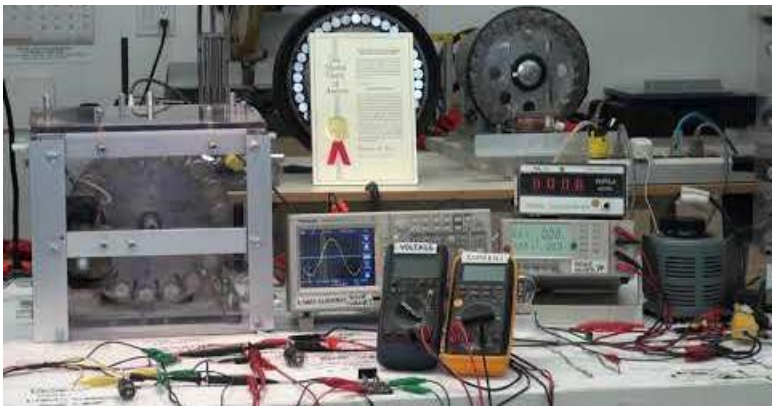


Fig. 1.2 ReGenX Electric Generator

VIDEO 1 **HOW THE ReGenX GENERATOR'S LOAD CURRENT DELAY PRODUCES EV REGENERATIVE ACCELERATION**

https://youtu.be/RA_Rq0zCtxQ?si=fJDndX-Y5dozTQ6z



VIDEO 2 **HOW THE LOAD CURRENT DELAY IS PRODUCED IN THE ReGenX GENERATOR COIL**

https://youtu.be/ZpTldXmYEko?si=vCvQmkBtnyQUTsfd

VIDEO 3 **EV REGENERATIVE ACCELERATION eBIKE PROTOTYPE**

https://youtu.be/AY69laN4HS8?si=1eAcNpYP-SvMQGTJ

VIDEO 4 UNLIMITED RANGE EV PROTOTYPE DATA

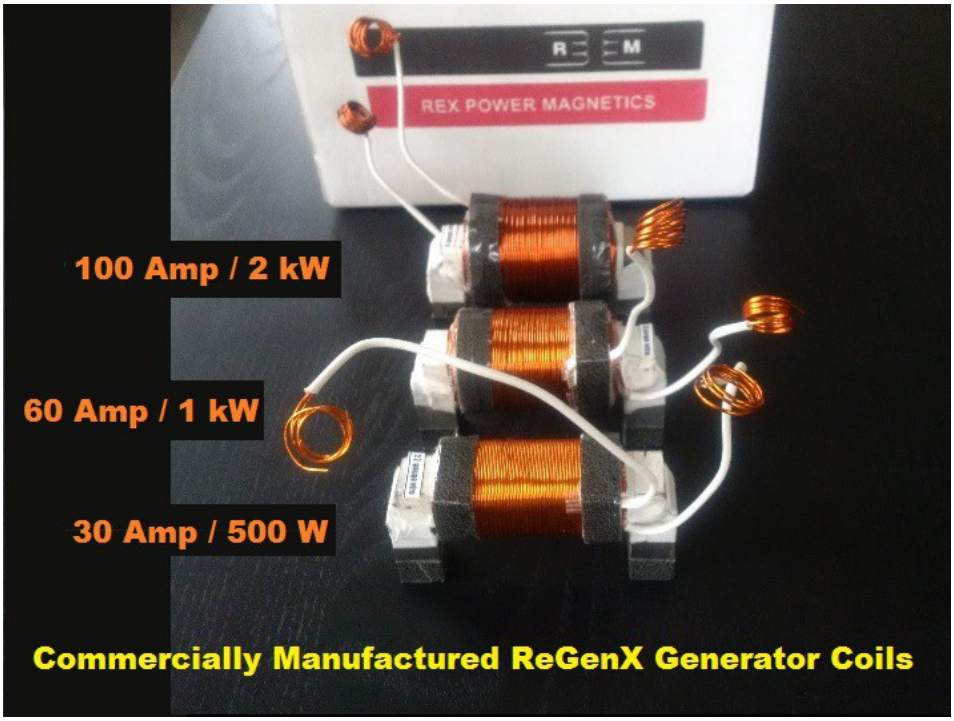
Demonstrated Results:

Unlimited EV Driving Range Demo https://youtu.be/H92qe2-tq6w?si=3F7Rqgl7z_fzJk8C
*** Test Vehicle: eBike EV Prototype**
*** Initial Battery Voltage: 74.8V**
*** Final Battery Voltage: 76.7V**
*** Duration: 9.5 minutes at 28 km/h**
*** Distance: 4.33 km**
*** Excess Power Generated: +30.6 Watts**
*** Result: Unlimited Driving Range**

VIDEOS 5 21 International (Holland, France, Italy) Infinite Efficiency Replications and Performance Validations with Complete Replication Instructions:

https://youtube.com/playlist?list=PLkH1zLdXy1Szq8UVumfPnivi49xccefue&si=7Nh0U0ghE8B9vDUO

Commercially Manufactured EV Regenerative Acceleration Generator Coils



HYUNDAI'S BOLD MOVE IN 2025

Faraday Motor Technology from 1822
Limited Driving Range with Plug-in Recharging

Faraday Motor/Generators
Less than 100% Efficiency

Heins ReGen-X Motor Technology from 2007
Unlimited Driving Range with Plug-in Discharging

Heins ReGen-X Motor/Generators
Infinite Efficiency

Michael Faraday's EV Regenerative Braking Technology from 1834

TESLA

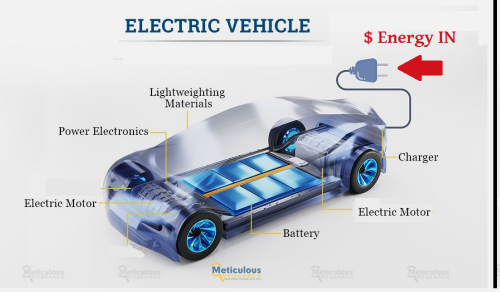
Battery Size = 900 kWh
Battery Weight = 12,000 lbs
Battery Cost = $80,000.00
Energy Consumption per Mile = 1.7 kWh
Driving Range = 500 Miles

Thane Heins Energy Inc. EV Regenerative Acceleration Technology from 2007

TESLA

Battery Size = 10 kWh
Battery Weight = 100 lbs
Battery Cost = $1000.00
Energy Generation per Mile = > 2 kWh
Driving Range = Unlimited Miles

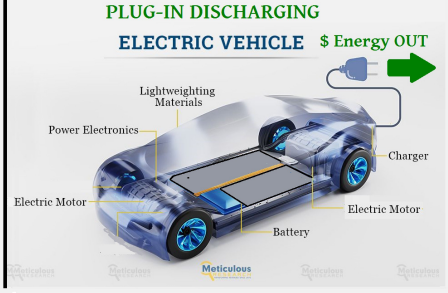
EV REGENERATIVE BRAKING PLUG-IN RECHARGING



TESLA MODEL 3 WITH EV REGENERATIVE BRAKING

Price: $89,990.00
Battery Size: 82 kWh
Battery Cost: $18,000.00
Driving Range: 340 Miles
Cost to Recharg: $16.00 - $49.00
Cost Per Mile: 4 cents/mile
Energy Consumption per Mile: 300 Wh/mile

EV REGENERATIVE ACCELERATION PLUG-IN DISCHARGING



TESLA MODEL 3 WITH EV REGENERATIVE ACCELERATION

Price: $72,900
Battery Size: 10 kWh
Battery Cost: $1000.00
Driving Range: Unlimited
Discharge Revenue Generated: $2.50
Cost Per Mile: 0 cents/mile
Energy Generation Capacity per Mile: >2 kWh per ReGenX Generator Coil

EV Regenerative Acceleration Performance Summary

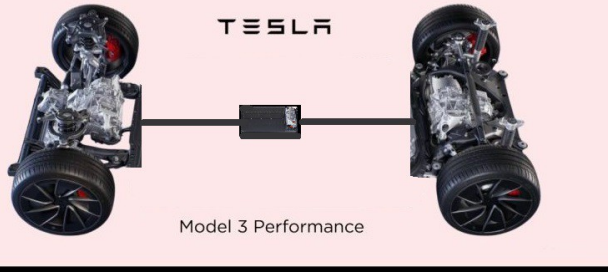
Energy Consumption Mobility Model to Energy Generation Mobility Model

1) ABOVE 30 km/hr the EV Regenerative Acceleration Motor transitions from the Energy Consumption to Energy Generation

2) The more Energy supplied to the EV's batteries the more the EV is accelerated and the less plug-in recharging is required.

3) ONLY 1 EV Regenerative Acceleration ReGenX Generator Coil is required to provide a Tesla Model 3 with unlimited driving range.

EV REGENERATIVE BRAKING VS EV REGENERATIVE ACCELERATION



EV Regenerative Braking

Battery Size = 75 kWh

Energy Sources = Plug in recharging & regenerative braking

RANGE = 260 Miles at 75 MPH

COST PER MILE = 4.67 cents - 9.7 cents

EV Regenerative Acceleration

Battery Size = 10 kWh

Energy Sources = Electromagnetic Field Energy Harvesting Regenerative Acceleration Motor, Electromagnetic Field Energy Harvesting Regenerative Acceleration Generator & regenerative braking.

RANGE = Unlimited Miles at 75 MPH

COST PER MILE = 0.00 cents

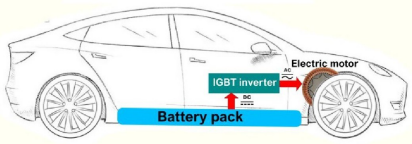
ReGeNeRGICA

Bici Elettrica con Accelerazione Rigenerativa

Range of EV at average operating condition (15% load)

EV Driving Range
with Faraday Motor (1820)
and Faraday Generator (1834)

20 kWh

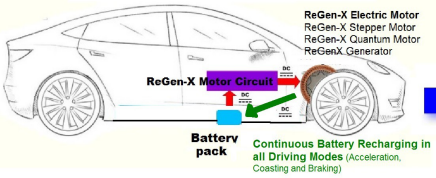


100 km

Range of EV with EV Regenerative Acceleration Motor (100% load)

EV Driving Range
with Heins ReGen-X Stepper Motor (2013)
Heins ReGen-X Quantum Motor (2007)
Heins ReGenX Generator (2007)

20 kWh



Unlimited km

Flyback mode process harnessing generator action in electric motor
Patent number: 10291162

Generator and improved coil therefor having electrodynamic properties
Patent number: 10103591

Energy Inc.

FARADAY ICE ALTERNATOR INVENTED IN 1834

Produces a Counter-Electromagnetic-Torque (TG)
Robs ICE of between 7 - 15 HP
Increases Fuel Consumption and Operating Costs $
Increases Greenhouse Gas Emissions
Increases Work and Stress on ICE
Operates according to Lenz's Law of Induction and Mayer-Joule's First Law of Thermodynamics

ELECTRICITY GENERATION ACCORDING TO LENZ'S LAW OF INDUCTION AND THE FIRST LAW OF THERMODYNAMICS

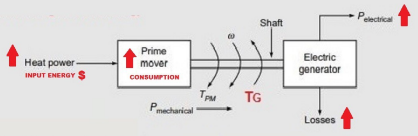
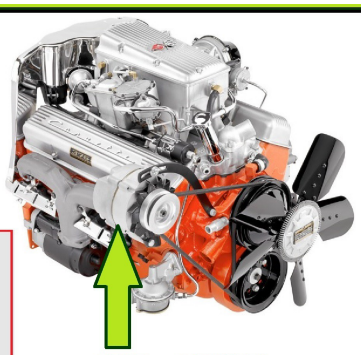


Fig. 1.1 Faraday Electric Generator

$\Delta U = Q - W$

First Law of Thermodynamics



HEINS us PATENTED
ICE ALTERNATOR /
ReGen-X QUANTUM MOTOR

ADDS ANY MAGNITUDE OF HP
TO ICE ENGINE NO ADDITIONAL
BATTERIES REQUIRED

US PATENTED HEINS ICE ALTERNATOR Invented in 2007
Patent # US20140111054A1
Produces a Complementary-Electromagnetic-Torque (TG)
Adds any magnitude of HP to ICE
Decreases Fuel Consumption and Operating Costs $
Decreases and or Eliminates Greenhouse Gas Emissions
Decreases Work and Stress on ICE
Operates according to Heins' Law of Induction and Heins' First Law of Thermodynamics for Electrodynamic Systems

ELECTRICITY GENERATION ACCORDING TO HEINS' LAW OF INDUCTION AND THE NEW FIRST LAW OF THERMODYNAMICS

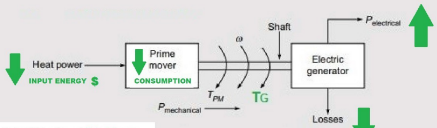


Fig. 1.2 ReGenX Electric Generator

$\Delta U = -Q + W$

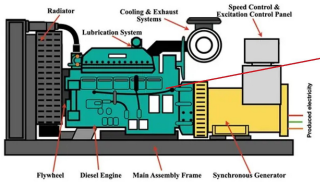
NEW First Law of Thermodynamics

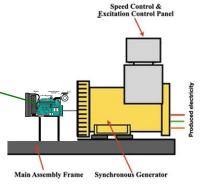
Energy Inc.

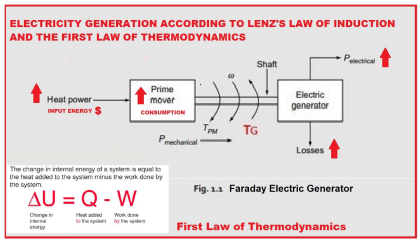
1 MW FARADAY GENERATOR GENSET INVENTED IN 1834

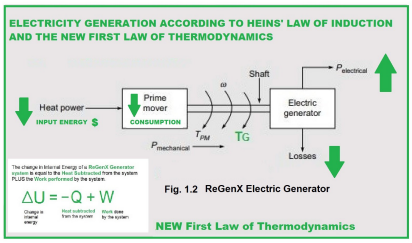
1 MW US PATENTED HEINS ReGenX GENERATOR GENSET INVENTED IN 2007

DIESEL PRIME MOVER







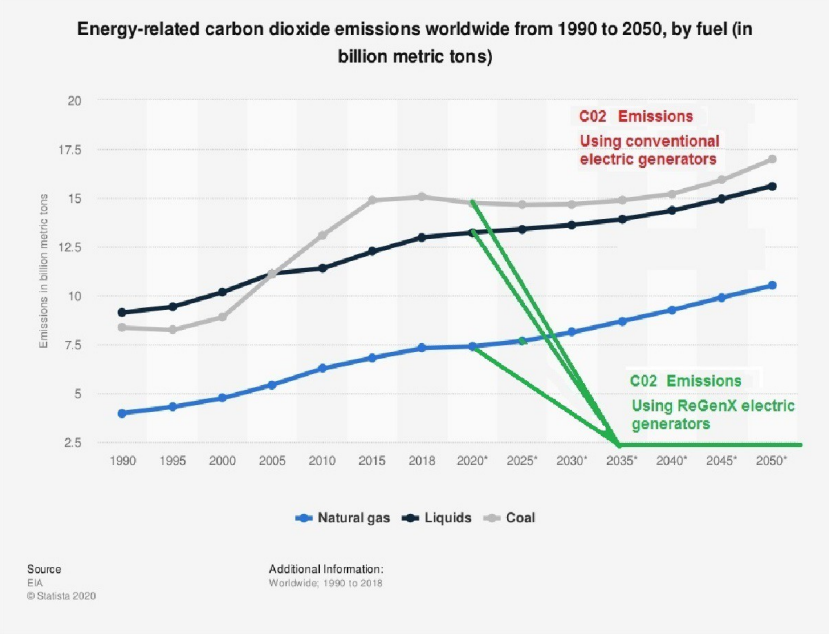


15,600 GALLONS / YEAR
$1,560,000 USD / YEAR
C02 = 159 METRIC TONS / YEAR

3,120 GALLONS / YEAR
$312,000 / YEAR
31.8 METRIC TONS / YEAR

GLOBAL COST = $24,960,000,000,000,000 / YEAR
C02 = 2,544,000,000,000,000 METRIC TONS / YEAR

GLOBAL COST = $4,882,000,000,000,000
C02 = 509,000,000,000,000 METRIC TONS / YEAR



First Law of Thermodynamics Equation	NEW FIRST LAW OF THERMODYNAMICS EQUATION
ΔE = Q - W	**△E = -Q + W**
(Net change in total energy) (Heat added) (Work done)	(Net change in total energy) (Heat subtracted) (Work done)
First Law of Thermodynamics for Faraday Generators	The New First Law of Thermodynamics for ReGenX Generators
"The Net change in the Total Energy of a system (ΔE) is equal to the Heat added to the system (Q) minus the Work done by the system (W)"	"The Net change in the Total Energy of a system (△E) is equal to the Heat subtracted from the system (Q) plus the Work done by the system (W).