

The Continuing Journey of Energy Efficiency

Frank Gundal

Grow Electric Use

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ENERGY



THE OUTLOOK ADVERTISING DEPARTMENT

Thomas A. Edison has made the best electric still better



THE Detroit ELECTRIC



Our literature points out, and you can find for yourself, fifty distinct advantages in the **Detroit Electric**—all vital to your comfort, and all contributing to make the **Detroit Electric** a better value.

Thomas A. Edison has emphasized and crowned these advantages by perfecting his storage battery.

The **Detroit Electric** is the only 1910 car of correct construction and sufficient voltage to use the large size A-6 **Edison** in all of its nine models.

The superiority of this A-6 battery is so pronounced that any car not equipped to receive it can no longer be ranked in the first class of electric car construction. If you buy a car not so equipped, it will be hopelessly out of date in another season.

You should have the book about the **Detroit Electric**.

You should have the book about the **Edison** battery. This battery is made of nickel and steel. By following the simple instructions, it will outlive your car, as there is nothing in it to wear out or deteriorate.

The electrolyte is an anti-acid solution of potash and water, instead of the destructive mixture of sulphuric acid; this insures the battery against leakage, breakage or corrosion.

It has greater capacity; 225 ampere-hours as against 112 to 169 in the lead type.

It may lie idle indefinitely without recharging; high-rate or overcharging will not hurt the battery.

Per unit of capacity, the **Edison** weighs 50% less than the lead batteries—which means less burden on the motor—less consumption of current—less wear on tires—greater mileage and efficiency.

Write for the **Detroit Electric** and **Edison** books.

ANDERSON CARRIAGE COMPANY, Dept. OM, DETROIT, MICH.

Too cheap to meter...

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No Air Pollution





Global Warming

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- Late 80's and 90's
 - Predecessor programs limited in scope and budgets
- 1998
 - Market based programs as we know them today
- 2008
 - Massachusetts Green Communities Act
 - No longer budget constrained, all cost effective efficiency
 - Tripled investment
 - Support of Combined Heat and Power
- 2018
 - Electric Efficiency changed to Energy Efficiency



ENERGY OPTIMIZATION

- Traditional Efficiency
- Fuel Neutrality
- Demand Management

Traditional Efficiency - Lighting

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All Indicators show robust remaining opportunities

- Large BCR's
- Potential Studies
- Efficiency cost versus supply costs
- Continued growth

And Legislation has opened the door for more

- Oil & Propane measures for C/I customers
 - Boilers
 - Weatherization
 - Air Source Heat Pump

The new plan is centered around a pivot towards energy optimization that includes reducing demand and managing peak loads

Key Demand Offerings:

- Technology agnostic demand response via Curtailment Service Providers (CSPs) for C&I customers
 - Pay for Performance program design
- Direct load control (DLC) for connected products in a residential house
- Carve out for storage projects
 - Pay for Performance program design
 - Different dispatch options (next slide)

The plan focuses on reducing usage during peak periods, providing economic and environmental benefits

Storage Participation Options

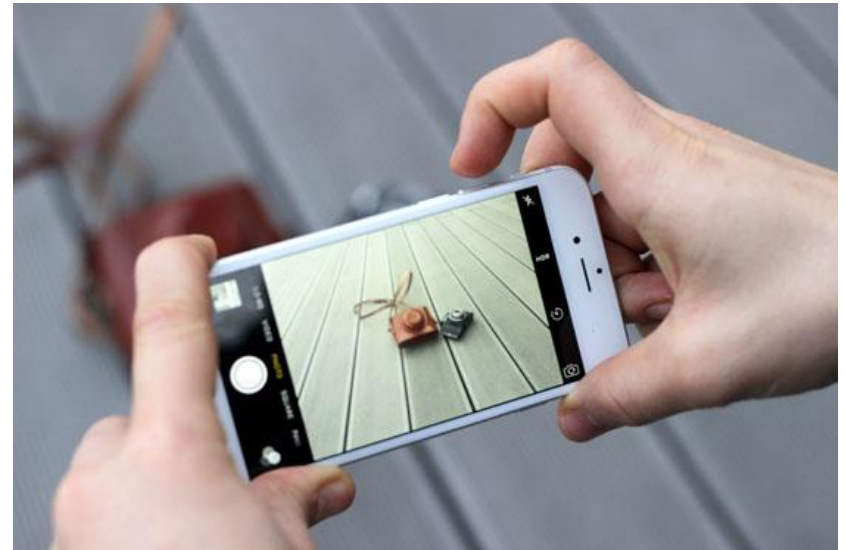
Pay for performance incentives will be available for all types of storage, including battery and thermal

Proposed Dispatch Criteria

Offering	Frequency	Duration	Season
<i>Storage Daily Dispatch</i>	Targets certain daily weekday peaks between June 1 and September 30, from 2-5pm or 3-6pm	Three hours	Summer
<i>Storage Targeted Dispatch – Summer</i>	Targets system peak ICAP and/or 10 of 20 top hours weekdays from 2-5pm or 3-6pm, approximately 6 - 10 events, between June 1 and September 30	Three hours	Summer
<i>Storage Targeted Dispatch – Winter</i>	Five events between December 1 and March 31 based on electric demand	Three hours	Winter

The PAs have asked the DPU for the ability to enter into 5 year performance contracts for **NEW** storage systems

The Challenge



The camera market didn't go away...

Thank You

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