#### PARETO ENERGY presents

#### Energy Independence Districts (EID's)

#### Council of Governments

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PARETO ENERGY



#### 3 December 2007 Maryland PSC Report

"The issues discussed...are framed by a factual premise about which there is no ambiguity or room for serious dispute:

unless steps are taken now, the State of Maryland faces a critical shortage of electricity capacity that could force mandatory usage restrictions, such as rolling black-outs, by 2011 or 2012.

We face this crisis because Maryland sits in a highly congested portion of the regional electric transmission system (which makes it difficult to bring more power in) and because we use more electricity than is generated here. We can respond essentially in two ways: we can add more capacity, either through new generation or transmission, or we can reduce the amount of electricity we use. At the end of the day, we will need to do some of both."



Pareto energy empowers communities and businesses to take control of their own energy future through the EID concept

- EID = Affordable Energy
- EID = Reliable Energy
- EID = Clean Energy
- EID = Competitive Economic Advantage



## Pareto Energy Ltd, Washington, DC

- Who we are:
  - Developed EID concept and implementation
  - Organizing and financing energy districts
  - US Conference of Mayors Platinum Partner
- Our focus:
  - Development of Energy Improvement Districts<sup>™</sup> (EIDs)
  - Sustainable / green energy infrastructure
  - Efficient finance:
    - Tax-exempt bonds
    - Incentives and grants



# Guy Warner, Founder and CEO, Pareto

- Trained as a financial economist, Mr. Warner worked for 7 years with the Washington National Tax Service of Price Waterhouse, before founding his own company in 1990.
- Mr. Warner has worked on more than 100 energy and financial planning engagements and provided financial and strategic planning advice to a number of electric and gas utilities in the United States, Europe and South America. He has served as an economic and energy expert before federal courts and state public utility commissions.
- Since 1995, Mr. Warner has concentrated his work on developing new energy efficiency, renewable energy and on-site power projects. He has worked on more than twenty-five such projects in North, Central and South America.





# What is an EID?

- The Energy Independence District<sup>™</sup> (EID) organizes
  local Municipalities, Businesses and Institutions into a
  locally managed and controlled, independently financed,
  energy district. The EIDs' four main objectives are:
  - Provide <u>*legal framework*</u> for the creation, installation and operation of local energy.
  - 2. Ability to *fund infrastructure* through use of PAB's, Equity, etc.
  - 3. Investment in <u>"Local"</u> energy technologies
  - Utilization of <u>clean technologies</u> to recycle waste, reduce emissions, and reduce participants carbon footprint



#### EID –Integrates Multiple Energy Options





## EID – Local Microgrid Approach





# EID = Clean/Green Energy

- Improvement to Regional Air Quality and reduction of Greenhouse Gas
- Cost effective, renewable, low emission, clean technologies
  - Demand Management
  - Renewable Energy such as Solar and Fuel Cells
  - Combined Heat and Power (CHP)
  - Smart Energy Grids and Thermal Storage
- CHP and other renewable energy technologies fit into US
   Green Building Council (LEED) standards



# EID = Lower Costs

- Recycle of wasted energy to minimize operating costs
- Utilization of low cost funding sources that include:
  - State and Federal Grants
  - Energy Independence District Bonds
  - Real Estate Investment Trust Equity
  - Syndication of and Federal Tax credits
- Avoids Utility distribution cost upgrades and focus on where power is needed most
- Can be implemented by the City without creation of a full municipal utility





#### Trigeneration = "Efficient Power"





## Clean and Affordable Energy Supply





# EID = Reliability

- Avoids business interruption through local generation.
- Central grid back-up
- Improved power quality for critical energy applications.
- Local users in control of their own energy resources.





## "4n Reliability": 5 minutes / yr



- Each generator meets "mission critical" loads, ensures continuous operations
- 4 generators, plus the grid as back-up
- "Five-9s" reliability

99.999% up-time = 5 min average downtime / yr

Typically *five to twenty years* between outages





#### Short outages matter



### EID = Competitive Advantage

- Cities and developers competing to attract businesses and new jobs can create an infrastructure capable of sustaining and supporting these businesses.
- Companies trying to control costs and demonstrate their environmental commitment can replace the "central grid" with local innovative solutions.
- Communities are empowered to control their own energy future.



# Steps for the formation of EID

- Enabling Legislation
- EID system planning & design
- Conduct Round table of energy & environmental stakeholders
- Passage of City Ordinance and establish of EID company where both the municipality & businesses are shareholders.
- Complete project finance offering to fund EID system development
- Implementation and commissioning of EID system





#### **1.6MW engine with trigeneration**



#### **Fuel Cell**



#### **Thermal Aquifer**









# For Further Information, Please Contact:

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