

# Reading The Electric Meter

## A Hundred Year Journey



March 12, 2018



1931

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Mike Frazier

Director of Engineering  
And  
Power Supply

Piedmont Municipal Power Agency



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# Overview of PMPA

- PMPA is a Joint-Action-Agency; one of 42 in the country.
- Incorporated in 1979, PMPA is a public body, corporate and politic of the State of South Carolina.
- PMPA has ten members: Abbeville, Clinton, Easley, Gaffney, Greer, Laurens, Newberry, Rock Hill, Union and Westminster.
- Commenced supplying wholesale electric services to Participants on June 21, 1985.
- PMPA's members serve approximately 100,000 electric meters.



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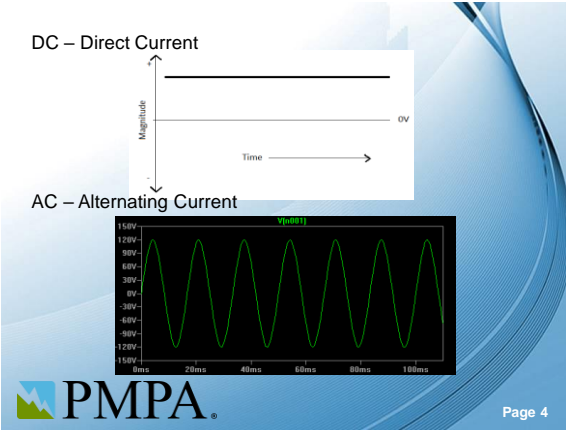
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Edison

vs.

Westinghouse

PMPA®

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Lamp Hour Meter

Samuel Gardiner

1872 DC

and

1878 AC

J.B. Fuller

PMPA®

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Oliver B.  
Shallenberger

1888



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Oliver B.  
Shallenberger

1894



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Elihu  
Thomson

1889



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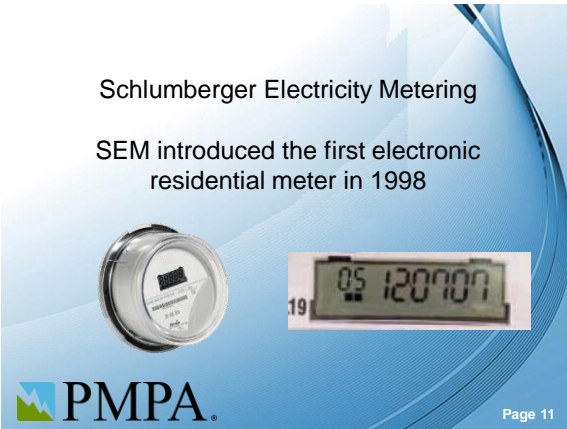
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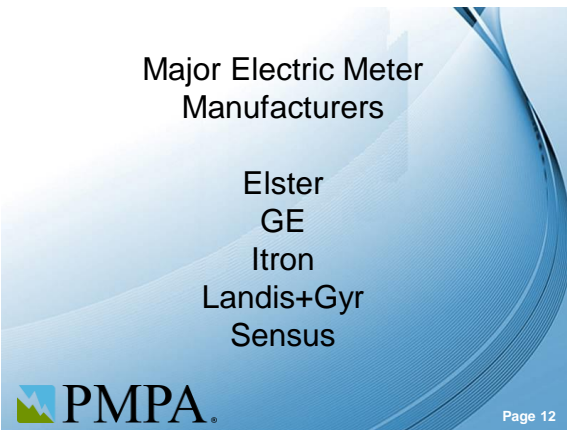
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Theodore George "Ted" Paraskevakos

1972

AMR  
Automated Meter Reading



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### Automated Meter Reading

- One-way Communications
- TOU
- Improved Accuracy
- Set Billing Cycles
- Tamper Detection



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ERT – Encoder Receiver Transmitter



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# AMI Advanced Metering Infrastructure

More than AMR



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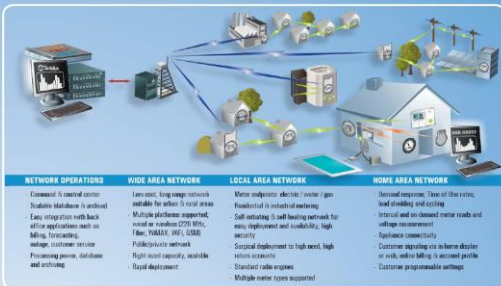
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## TANTALUS UTILITY NETWORK



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Why install AMI?

- 1) Get rid of the meter readers?
- 2) Improve meter reading reliability and do it efficiently
- 3) Disconnect electric meters remotely
- 4) Decrease restoration times – outage management system or OMS
- 5) Improve customer service
- 6) Provide usage information to Customers - MDMS




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Why install AMI?

- 7) Prepay
- 8) Lighting controls
- 9) High latency SCADA controls
- 10) Report tamper and flags



1907




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### Solar & Wind Metering

Net Metering / Net Billing

Typically spins the meter backwards / Avoided cost credit  
 meter backwards / for what comes out  
 on the grid

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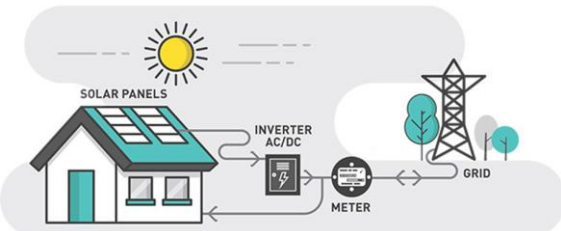
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### BI-DIRECTIONAL METERING




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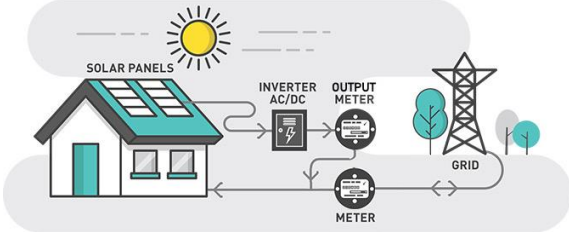
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### BI-DIRECTIONAL AND OUTPUT METERING



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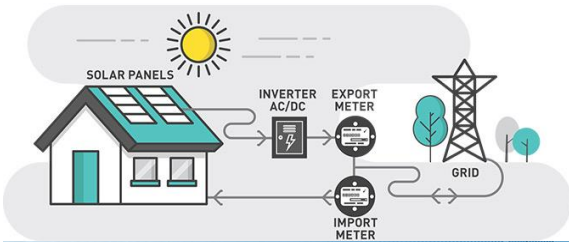
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### GROSS METERING



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## QUESTIONS

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