<table>
<thead>
<tr>
<th>Facts</th>
<th>Trends</th>
<th>Opportunities</th>
</tr>
</thead>
</table>

ILLINOIS ENERGY UPDATE 2014

Facts | Trends | Opportunities

ILLINOIS CHAMBER OF COMMERCE ENERGY COUNCIL
WHAT I’M GOING TO TALK ABOUT

Illinois Energy – Where is it from?

Hot Energy Topics in Illinois in 2014

Things to Remember
WHAT IS THE ENERGY COUNCIL?
WHERE DOES ILLINOIS ENERGY COME FROM?
WHERE DOES ILLINOIS ENERGY COME FROM?

Electricity
WHERE DOES ILLINOIS ENERGY COME FROM?

Electricity

Heat
WHERE DOES ILLINOIS ENERGY COME FROM?

- Electricity
- Heat
- Fuel
WHERE DOES ENERGY COME FROM?

Electricity

Sources of Electricity Generation

<table>
<thead>
<tr>
<th>Source</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nuclear</td>
<td>49%</td>
</tr>
<tr>
<td>Coal</td>
<td>43%</td>
</tr>
<tr>
<td>Renewable Energy</td>
<td>5%</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>3%</td>
</tr>
</tbody>
</table>

Illinois

Source: EIA.gov – January through October 2013
WHERE DOES ENERGY COME FROM?

Electricity

Sources of Electricity Generation

Illinois

- **49%** Nuclear
- **43%** Coal
- **5%** Renewable Energy
- **3%** Natural Gas

U.S.

- **37%** Coal
- **30%** Natural Gas
- **20%** Nuclear
- **7%** Hydro
- **3.5%** Wind
- **2.5%** Other

Source: EIA.gov – January through October 2013
WHERE DOES ENERGY COME FROM?

Heat

Sources of Heating Fuel

- 80% Natural Gas
- 15% Electricity
- 5% Other (propane/petroleum)

Illinois

Source: U.S. Census Bureau, 2013 Survey
**WHERE DOES ENERGY COME FROM?**

**Heat**

*Sources of Heating Fuel*

**Illinois**
- 80% Natural Gas
- 15% Electricity
- 5% Other (propane/petroleum)

**U.S.**
- 50% Natural Gas
- 35% Electricity
- 15% Other (propane/petroleum)

Source U.S. Census Bureau, 2013 Survey
WHERE DOES ILLINOIS ENERGY COME FROM?

Sources of Transportation Fuel

Natural Gas    Biofuel    Electricity    Crude Oil
OIL: WHERE DOES IT COME FROM?

How much of our oil comes from foreign countries?

- **2008**
  - 40% U.S. Petroleum
  - 60% Imported Petroleum

Note: U.S. Petroleum includes balancing item.

Source: U.S. Energy Information Administration, *Monthly Energy Review*; Table 3.3a (March 2012), preliminary data.
OIL: WHERE DOES IT COME FROM?

How much of our oil comes from foreign countries?

2008
40% U.S. Petroleum
60% Imported Petroleum

2013
60% U.S. Petroleum
40% Imported Petroleum

Note: U.S. Petroleum includes balancing item.

Source: U.S. Energy Information Administration, Monthly Energy Review; Table 3.3a (March 2012), preliminary data.
OIL: WHERE DOES IT COME FROM?

The Elite Eight

- 8 – Kuwait  4%
- 7 – Colombia  6%
- 6 – Nigeria  6%
- 5 – Iran  7%

Source: EIA.gov 2013
OIL: WHERE DOES IT COME FROM?

The Elite Eight

8 – Kuwait        4%
7 – Colombia      6%
6 – Nigeria       6%
5 – Iran          7%
4 – Venezuela     13%
3 – Mexico        13%
2 – Saudi Arabia  18%

Source: EIA.gov 2013
The Elite Eight

8 – Kuwait  4%
7 – Colombia  6%
6 – Nigeria  6%
5 – Iran  7%
4 – Venezuela  13%
3 – Mexico  13%
2 – Saudi Arabia  18%
1 – Canada  33%

Source: EIA.gov 2013
COST OF GAS?

What goes into the price of a gallon of gasoline?
THE 2014 ILLINOIS ENERGY UPDATE

Hydraulic Fracturing in Illinois
Where Hydraulic Fracturing Might Occur in 2014

Illinois Counties

Clay, Edwards, Effingham, Franklin, Gallatin, Jasper, Jefferson, Johnson, Lawrence, Marion, Pope, Richland, Saline, Washington, Williamson, Wabash, Wayne
THE 2014 ILLINOIS ENERGY UPDATE

Smart Grid
THE 2014 ILLINOIS ENERGY UPDATE

What is Smart Grid?

- Smart Home/Business
- Smart Meters (AMI)
- Smart Distribution System
- Smart Utility

PowerCo
THE 2014 ILLINOIS ENERGY UPDATE

Electricity Aggregation
THE 2014 ILLINOIS ENERGY UPDATE

Electricity Aggregation
THE 2014 ILLINOIS ENERGY UPDATE

Coal – Generation v. Production
THE 2014 ILLINOIS ENERGY UPDATE
THE 2014 ILLINOIS ENERGY UPDATE

Wind
THE 2014 ILLINOIS ENERGY UPDATE

Battery Storage

Argonne
NATIONAL LABORATORY
THE 2014 ILLINOIS ENERGY UPDATE

Battery Storage

9-9-9
Battery Storage

Five times the energy density, one fifth the cost, in five years
THE 2014 ILLINOIS ENERGY UPDATE

Energy Infrastructure in Illinois
THE 2014 ILLINOIS ENERGY UPDATE

Pipeline Infrastructure in Illinois
More Pipelines in Illinois?
THE 2014 ILLINOIS ENERGY UPDATE

Rail Transportation
EFFICIENCY/CONSERVATION
THINGS TO REMEMBER WHEN IT COMES TO ENERGY
WHAT DO PEOPLE WANT?

Energy that is...
WHAT DO PEOPLE WANT?

Reliable
Cheap
Domestic
Available
No Environmental Footprint
THE NUMBER OF PERFECT ENERGY SOLUTIONS
THINGS TO REMEMBER

Energy Independence

Two out of three ain’t bad...and it’s getting better!

- Electricity
- Heat
- Transportation
THINGS TO REMEMBER

They’re just not that into you!
It’s Complicated!
THINGS TO REMEMBER

Things Change
THINGS TO REMEMBER

Things Change

*But nobody knows how!*

It’s tough to make predictions, especially about the future.

_Yogi Berra_
Is the Glass Half Empty or Half Full?
Is the Glass Half Empty or Half Full?

*It’s actually overflowing!*
Energy: Think Variety and Efficiency