

New Initiatives for ESCO-Delivered Energy Efficiency

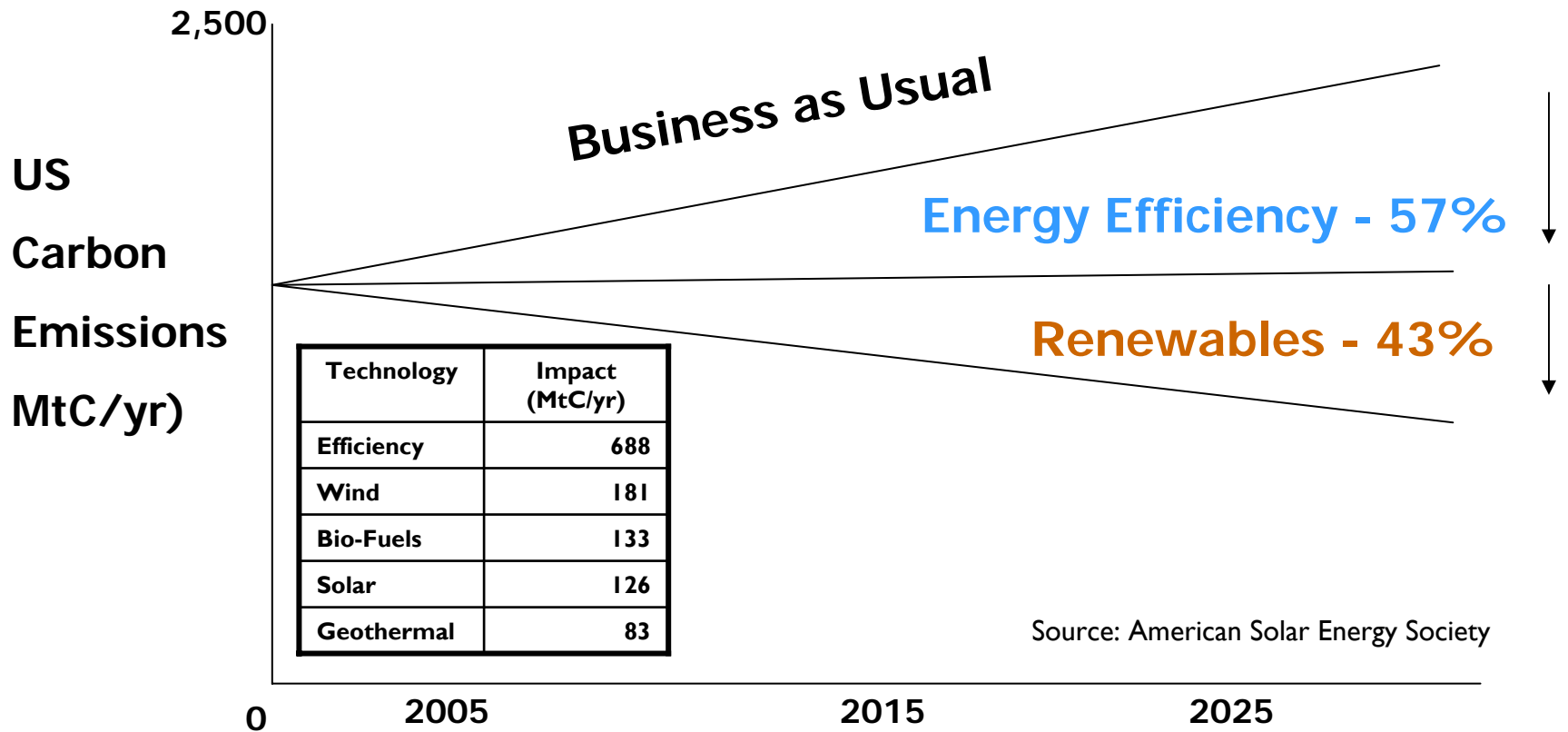
Clinton Climate Initiative

And

Virginia Tech Energy Efficiency Partnership of Greater
Washington

*Jeffrey W. Eckel, **President & CEO,**
Hannon Armstrong*

To Stabilize Carbon Dioxide below the 500 ppm threshold level, Energy Efficiency will contribute 60% of the CO2 reductions, dwarfing the contributions of any one renewable energy technology.



Hannon Armstrong Infomercial

- Hannon Armstrong has financed and has investments in geothermal, wind and solar assets including,
 - Hudson Ranch Geothermal** – Salton Sea;
 - Wind farm** for US Government at Guantanamo Bay;
 - SEGS VII and VIII** and **SunEdison Alamosa PV Project**
- Our largest area of investment focus is in **Energy Efficiency**

Investing One Billion Dollars ... What would you do?

- From an investor standpoint, energy efficiency poses challenges relative to conventional infrastructure finance or even renewable finance.
- In order to invest \$1 billion dollars in energy assets, investors will have to do:
 - 1 IGCC plant;
 - 5 Geothermal projects;
 - 13 Wind projects; or
 - **200 Energy Efficiency projects.**
- It is the nature of the asset that it comes in small packages and the finance problem is much tougher to solve than large, project financings.

Our Efficiency Portfolio

- Hannon Armstrong has financed over \$1.5 billion in energy efficiency assets since 2001.
- We fund through several Hannon Armstrong Multi-Asset Trusts (“Hannie Mae”)
 - 275 separate transactions at \$5.5m per transaction
 - 1,200 separate Energy Conservation Measures (“ECM”) at \$1m per ECM
 - 440 Legal opinions.
- We are proud of the effort to date but recognize this is only the beginning of the energy efficiency finance market.

As if Size Wasn't a Problem...

From a strict finance standpoint Energy Efficiency does not compete well with Renewable Energy assets.

Technology	Ability to Turn-off for Lack of Payment	Equity/Coverage	Collateral
Energy Efficiency	4	4	4
Geothermal	3	1	3
Wind	2	2	2
Solar	1	3	1

1 = Best, 4 = Worst

The great promise in energy efficiency is if the CO2 benefits gets factored into the economic analysis.

How Much CO2 for a Billion Dollars?

Technology	CO2 Reductions Annually (Billions of lbs)	Cents/kWh
Energy Efficiency	2.15	6.0*
Geothermal	2.10	10.0
Wind	1.76	9.0
Solar	.47	30+

** ESCO Provided Energy Efficiency as estimate by ORNL and Hannon Armstrong*

Three “Stars” Need to Align to Make Efficiency Finance Profitable

- Aggregation is the key to energy efficiency finance and aggregation has to occur at three distinct levels:
 - At the end user level – common contracts are key. The work we are doing with the Clinton Climate Initiative and Virginia Tech is an example of this.
 - At the ESCO level – credit worthiness and common contracts
 - At the finance level – securitization is one such tool
- From a finance standpoint, we can only control the third tier financial aggregation requirement. It is up to others in government and industry to supply the necessary aggregation to make energy efficiency finance profitable.

How Will Efficiency Take Off?

- **A Photo Op.** Seriously. How can Energy Efficiency compete with a photogenic solar panel, wind turbine or an ear of corn?
- Extension of the Federal Energy Savings Performance Contract (ESPC) to **Mobile assets.** (This will solve PayGo for 20 years of PTC and ITC extensions for Renewables).
- Recognition that Efficiency investments have a much **larger impact on carbon** per dollar of investment than renewables and need to benefit from carbon trading.
- **Aggregation, Aggregation, Aggregation.**



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