

Investing in Renewable Energy

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by

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Outline

- How much to invest?
- Mutual Funds, Stocks, or ETFs?
- How to Pick Stocks

- Jargon
 - RE = Renewable Energy



Disclaimers

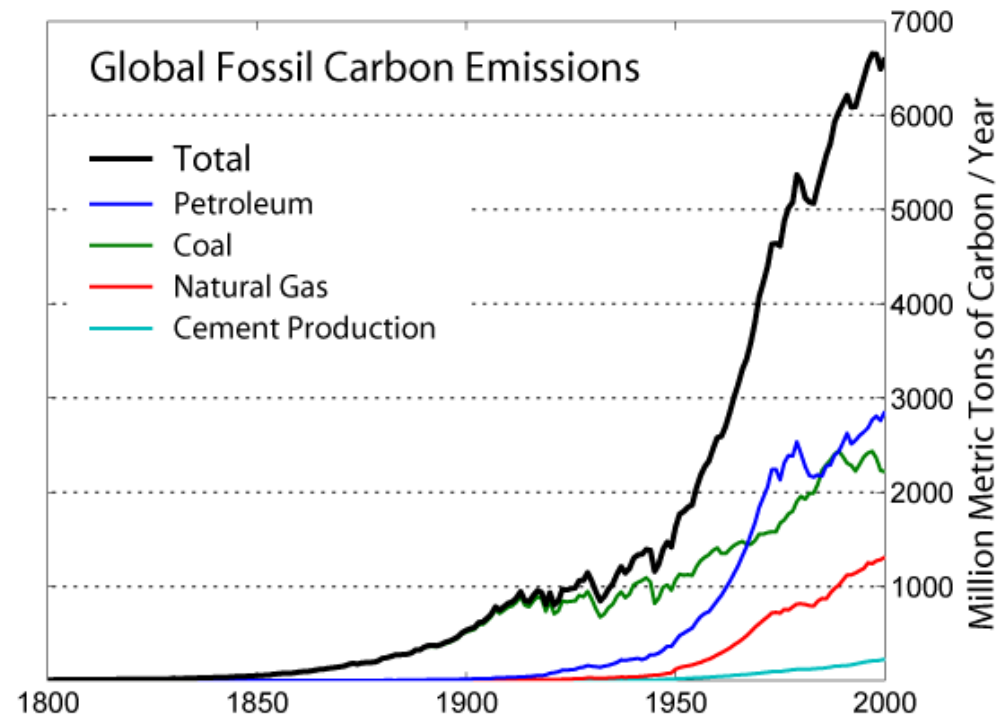
- This talk is intended as an overview and should not be interpreted as individual investment advice or financial planning.
- Individual needs vary, so you should carefully consider if and how the information presented here applies to your situation. No advice is appropriate for everyone.



Disclaimer

No investment strategy can guarantee against loss in adverse market conditions,

or against Global Warming in periods of rising atmospheric greenhouse gasses.



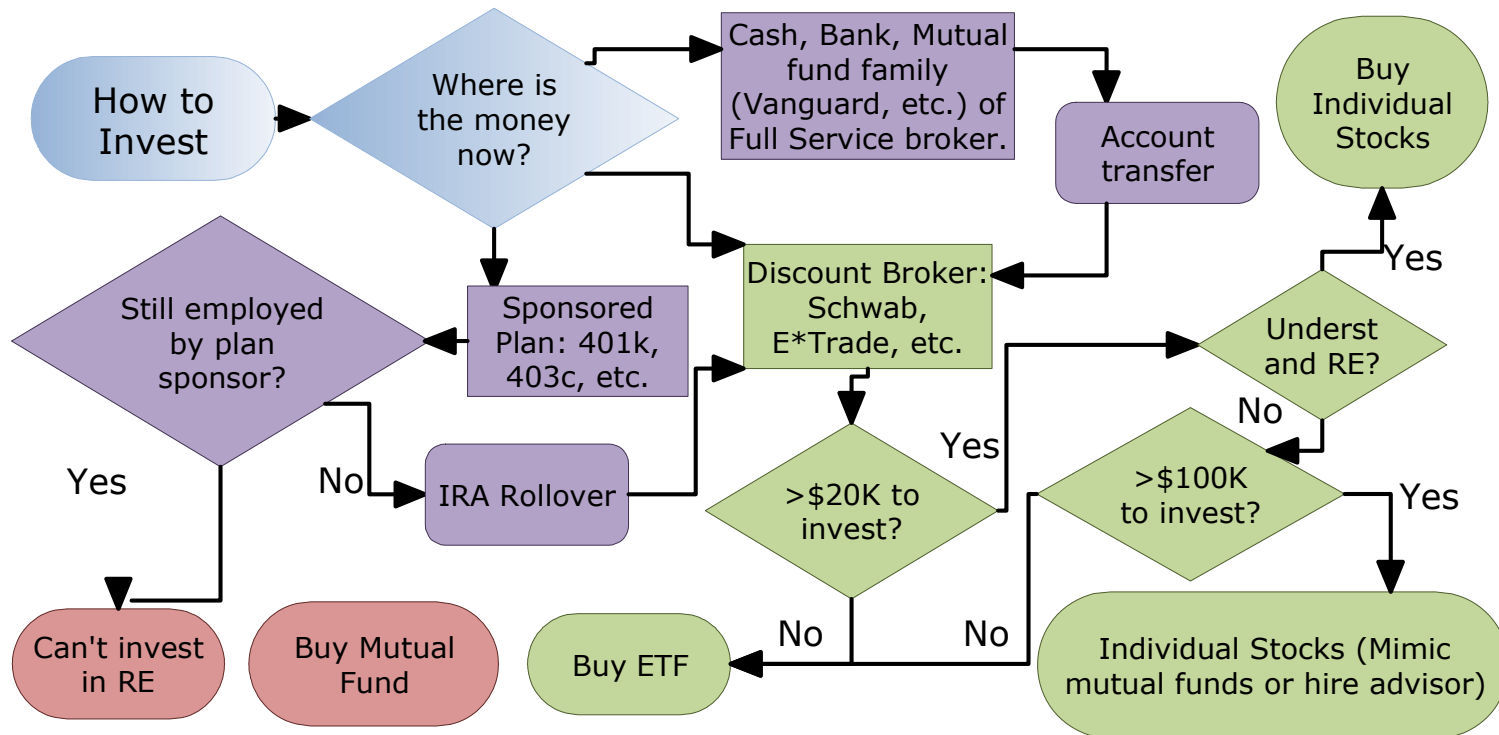
How Much to Invest?

- These stocks are very volatile
- While the long term outlook for RE is bright, there will be short term corrections.
- 5-20% of your portfolio, depending on your risk tolerance.
- Don't go in all at once, and buy on the dips.

Mutual Funds, ETFs, or Stocks?

- Mutual Funds:
 - Easy, but have high fees.
- ETFs (“Exchange Traded Funds”)
 - Easy, lower fees.
- Individual Stocks:
 - This is work.
 - lowest cost for larger investments
 - Can use you knowledge of RE

Decision Tree

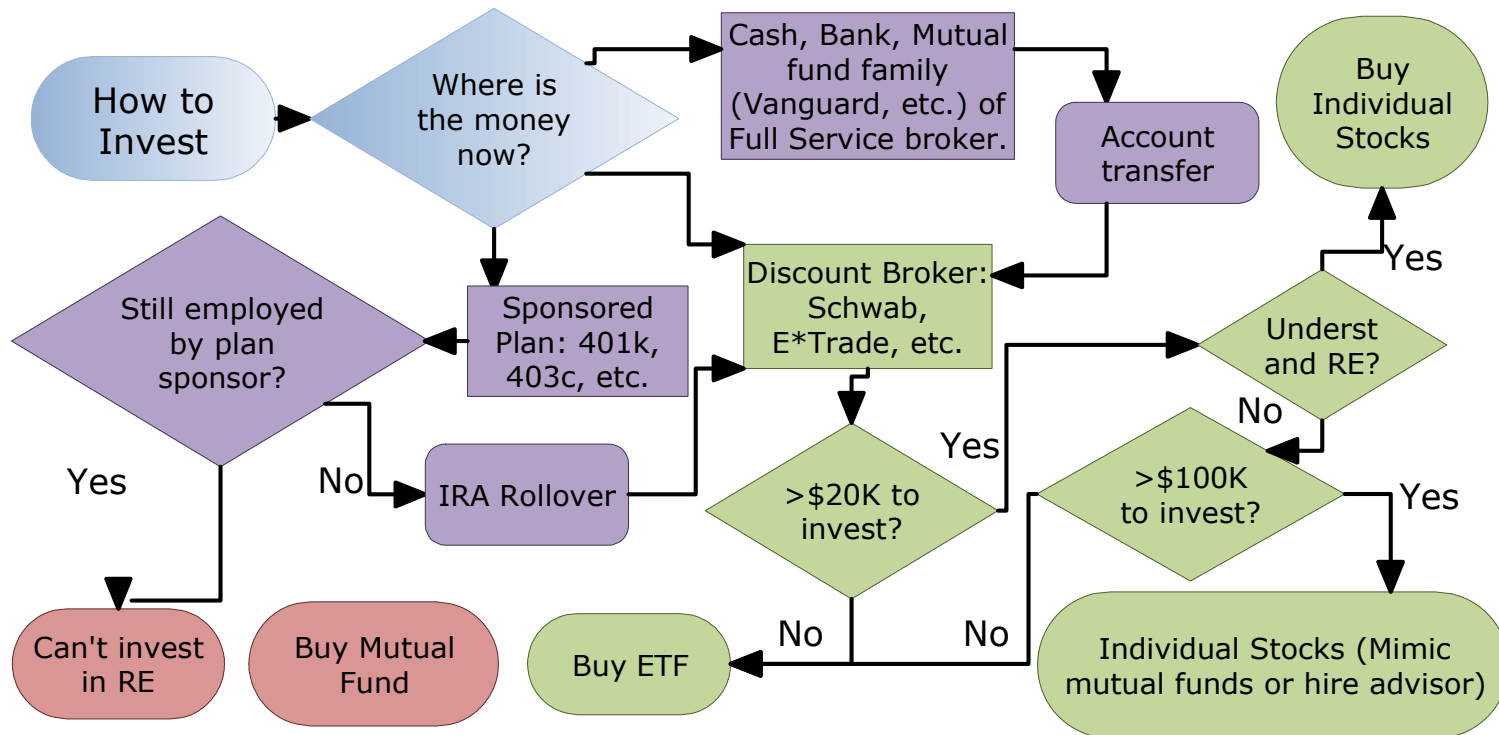


Note: numbers are approximate.

Mutual Funds

- Generally very expensive in terms of fees.
- BEST: Guinness Atkinson Alternative Energy (GAAEX)
 - Most diverse portfolio among mutual funds.
 - Includes international companies.
 - No load, but *very* high expense ratio (1.98%)

Decision Tree



Note: numbers are approximate.

ETFs

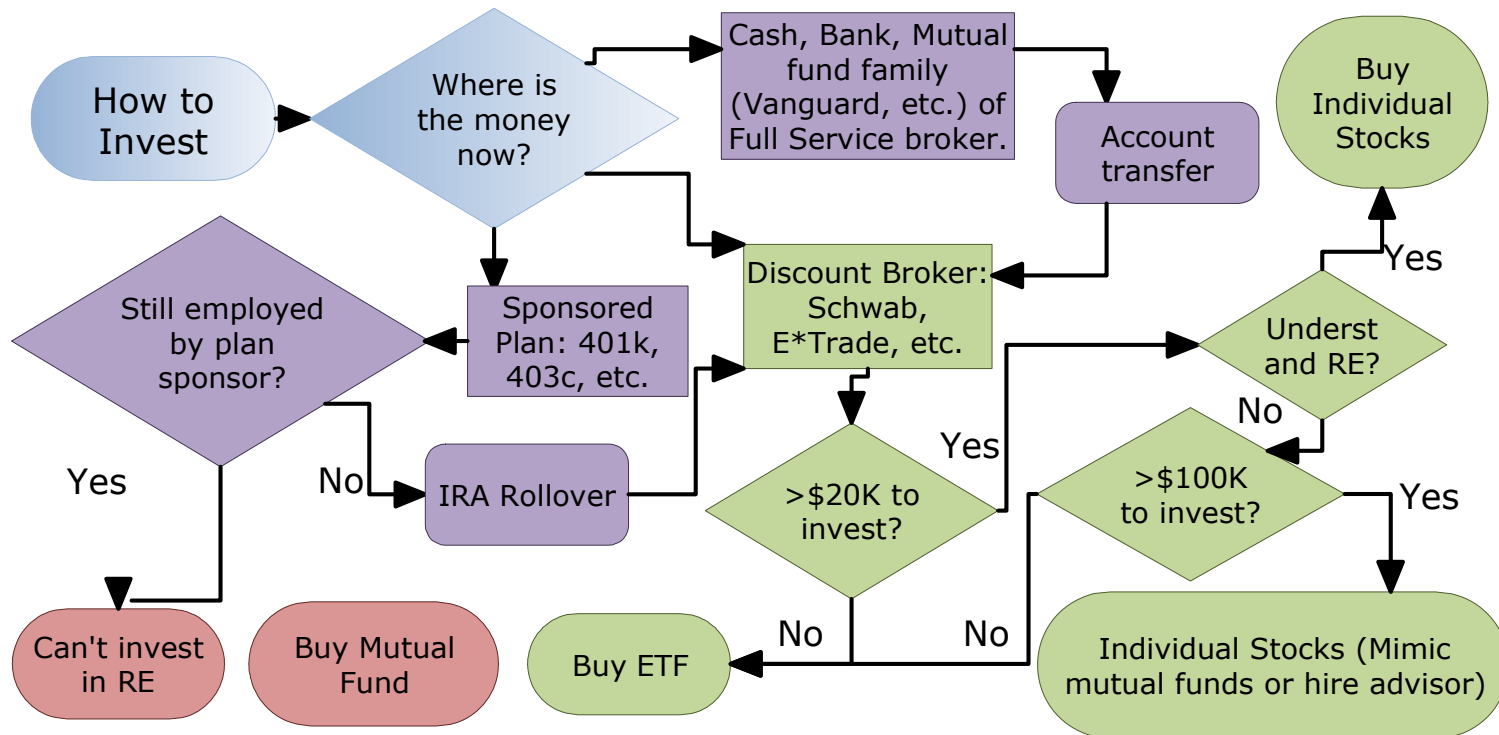
Powershares Wilderhill Clean Energy		First Trust NASDAQ Clean Edge US Liquid		Market Vectors Global Alternative Energy	
PBW	Expense 0.7%*	QCLN	Exp. 0.6%*	GEX	Expense 0.65%*
Tracks index of US stocks		Tracks index of US stocks		Global index (world stocks)	

* Includes temporary fee waiver.

New: Solar ETFs

Claymore MAC Global Solar Energy Index ETF		Market Vectors - Solar Energy ETF	
KWT	Exp: 0.65%	TAN	Exp: 0.65%
Both track global solar indexes, and are highly concentrated (27 Companies each.) If you must use an ETF, I would prefer one of the broader ones.			

Decision Tree



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Stocks: The Easy Way

- Look at the holdings of one of the ETFs or Mutual Funds, and buy the top 10 or 20.
- Expense ratio of QCLN per \$10,000 per year is \$60. That's 4-6 trades per year a discount broker.
- Many brokers offer commission free trades to new accounts.

ETF top holdings

- PBW
 - SPWR, ELON, CY, CREE, FSLR, OM, PANL, KYO, STP, AMAT
 - Source: Morningstar.com
- QCLN
 - LLTC, WFR, SPWR, FSLR, HXL, AVX, BEZ, ONN, ITRI, MSCC
 - Source: Morningstar.com

Stocks: The Hard Way

- What do you know about RE that most people don't?
- Use what you know to pick between RE sectors.
- Avoid the obvious

It Goes Without Saying... or Investing?

- Q: What is the first thing to do before you put solar panels on your roof?
- A: Improve energy efficiency
- Investing: Buy energy efficiency companies before you buy PV companies.
- Some examples: JCI, AA, COMV, ENOC, CREE, PHG

The Car of the Future

- Q: Which will you be able to buy in the next five years: A hydrogen fuel cell car, or a plug-in Hybrid?
- A: PHEV!
- Investing: Dump the hydrogen fuel cell stocks, and invest in batteries.
- Some examples: ALTI, EEEI, JCI, MXWL, VLNC

Can Any Car be Green?

- Q: What's Even Lower Impact than an Electric Car?
- A: Public Transit
- Investing: Bus manufacturers, rail service and manufacturing
- NFYIF, WAB, TRN, PRPX

It's Always Blowing Somewhere

- Q: If the wind is always blowing somewhere, and there is enough sun in a square 100 miles to a side of Southwestern desert to power the whole country, what is the missing ingredient.
- A: Large scale electric transmission.
- Invest: Transmission companies
- Some examples: ABB, SI, ITC, PWR, NGG, CPTC

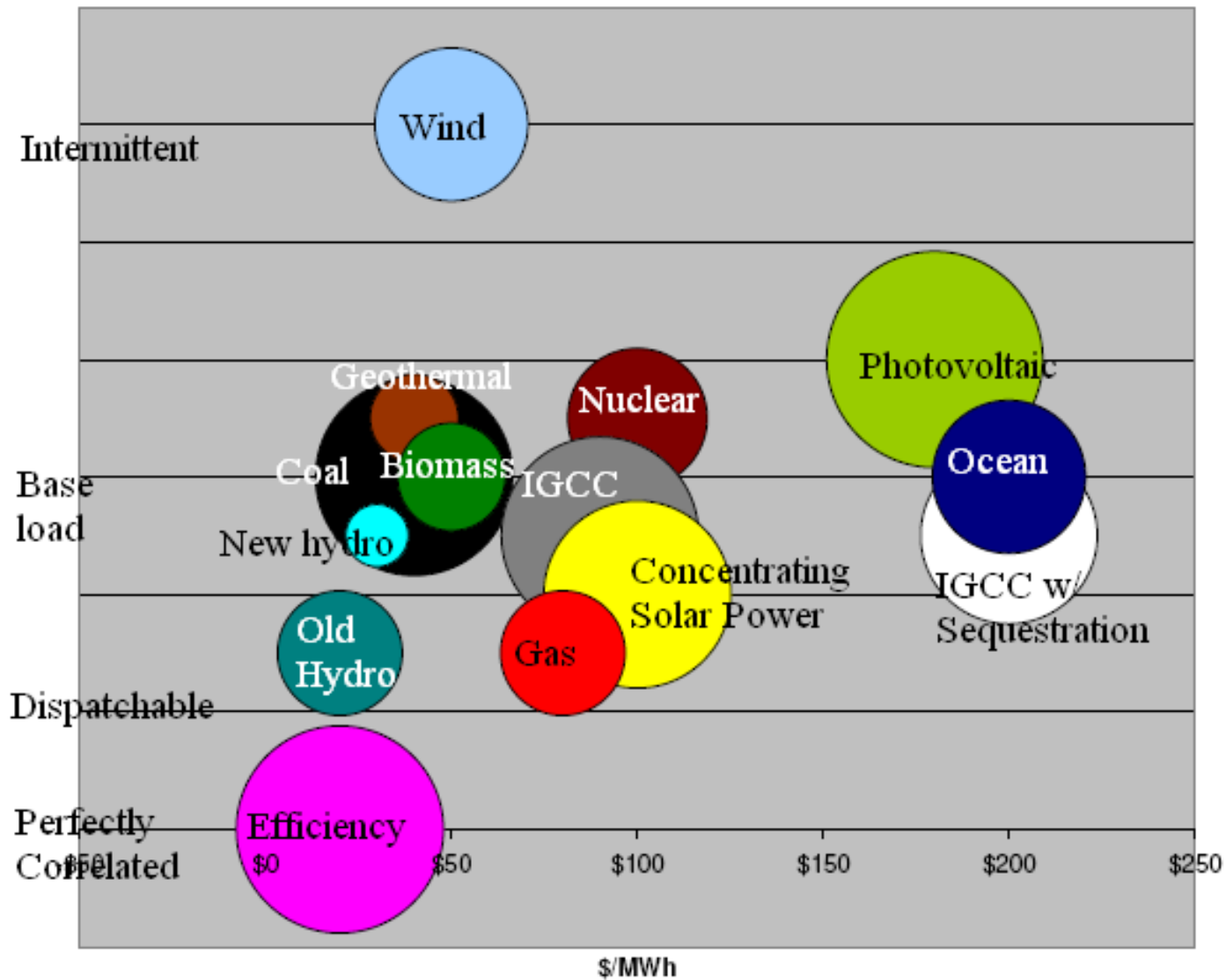
The Other Baseload

- Q: Do we really need baseload power to run the electricity grid?
- A: No. A smart grid can accommodate shifting supplies by shifting demand to match.
- Investing: Smart metering, Energy Storage, Power regulation
- Stocks: ELON, ITRI, VRBPF, ACPW, BCON, ENOC, COMV

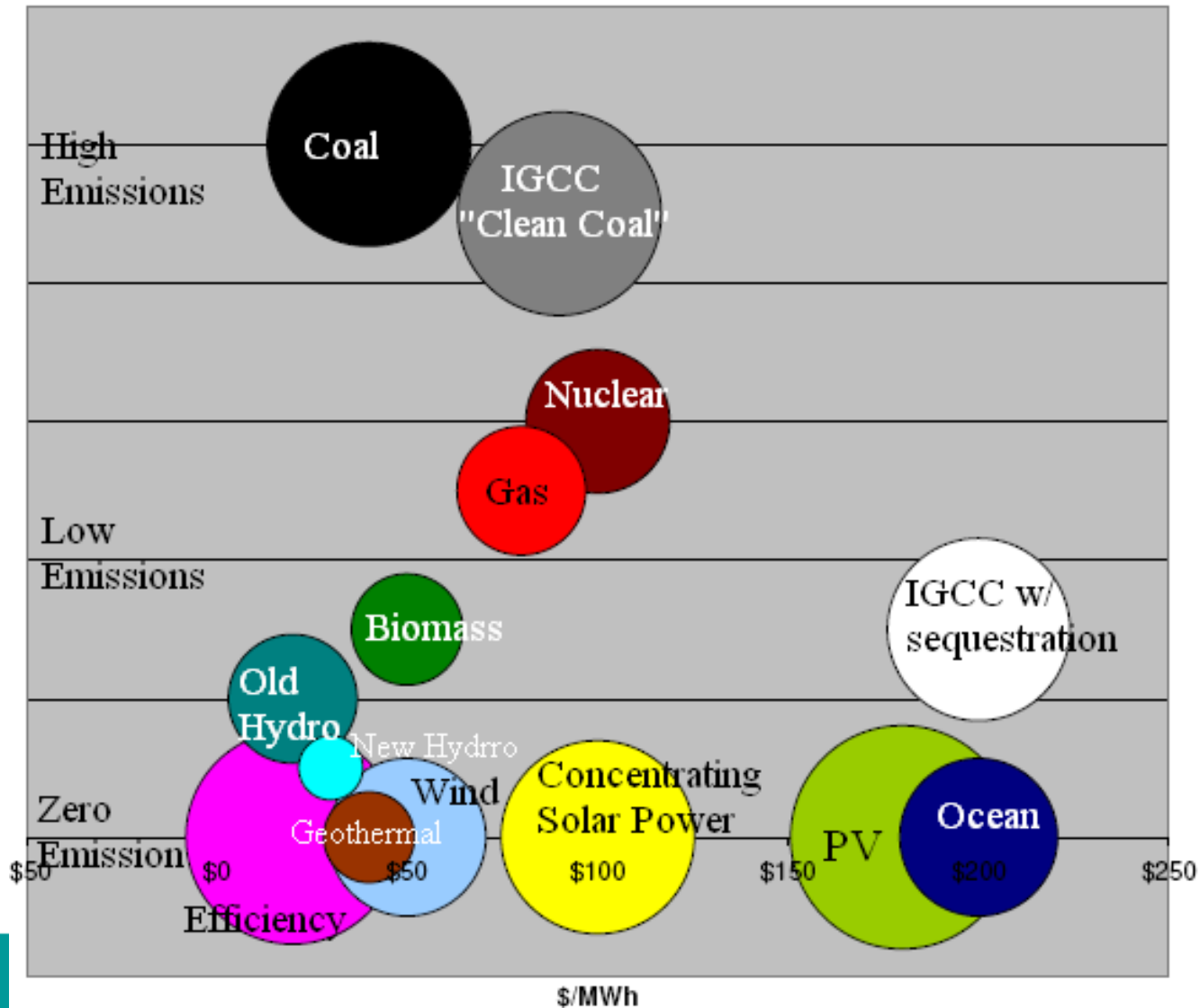
Electricity Generation Technologies

- Disclaimers:
 - The following charts are based on my opinion from extensive reading in the field, is highly qualitative and represents a simplified picture.
 - Don't expect scientific accuracy.
 - Bubble size approximates the size of the potential resource.
- Bottom/Left is “Better”

Availability vs. Price



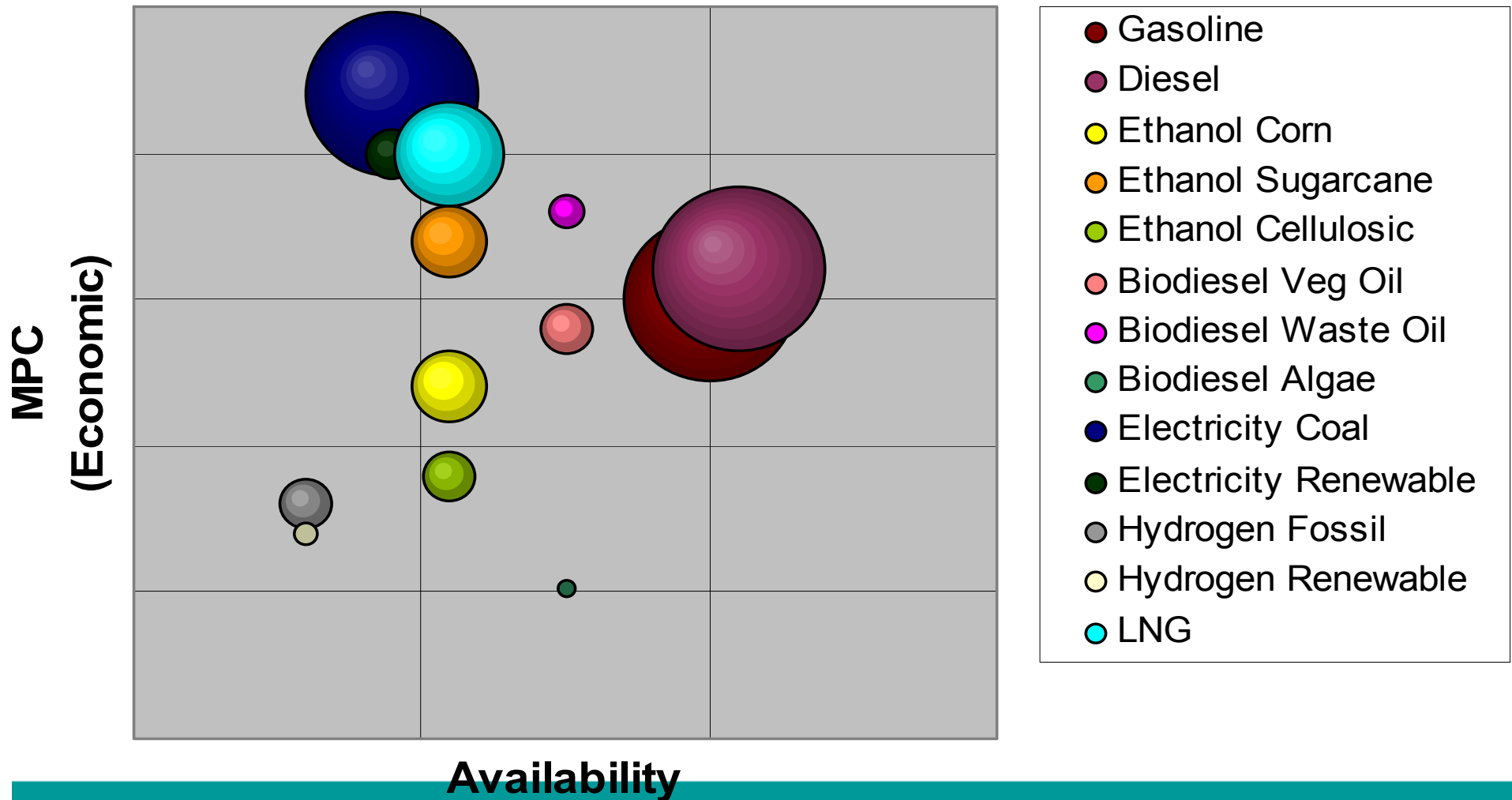
Emissions vs. Price



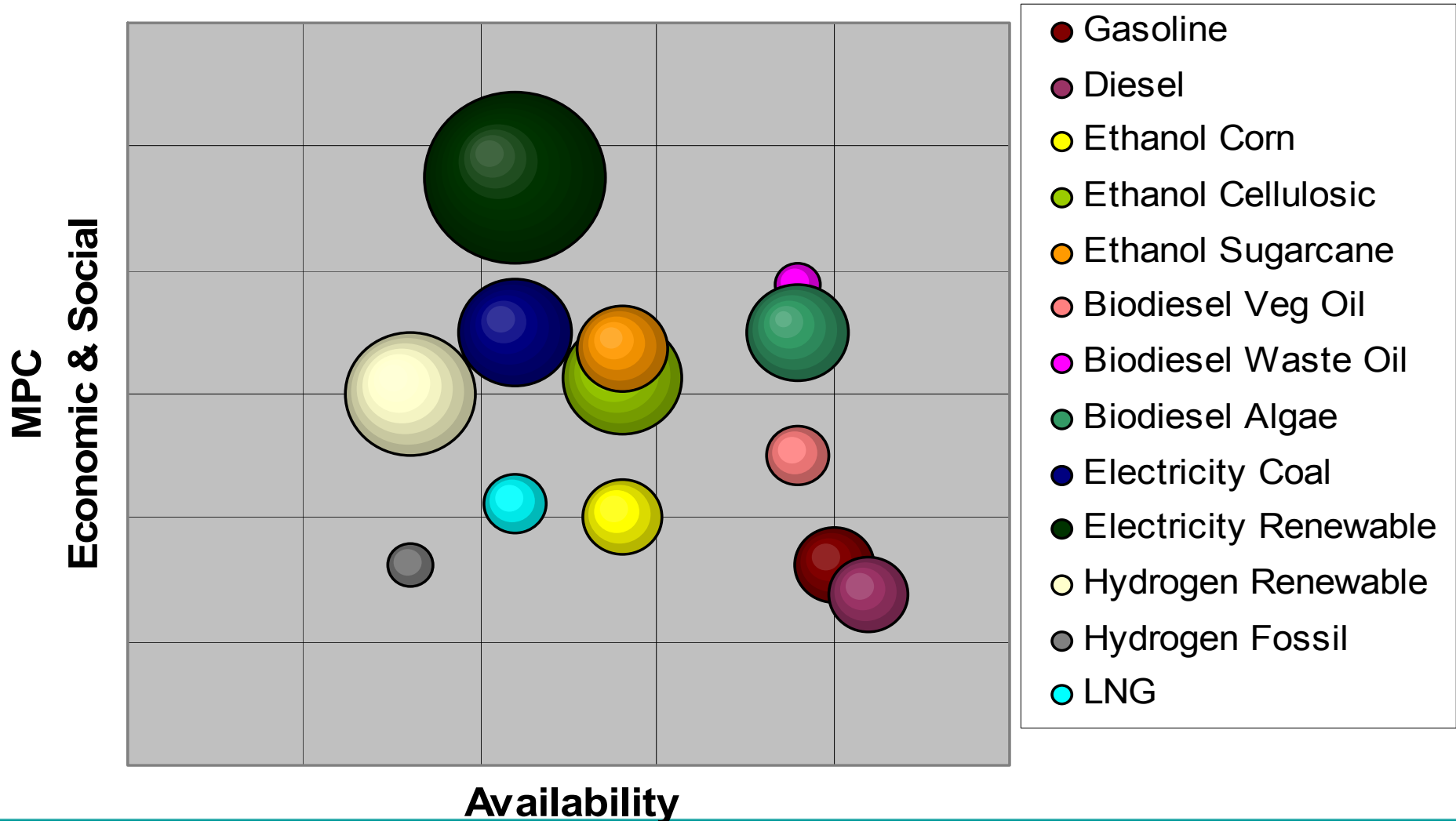
Transportation Fuels

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Current Transportation Fuel Characteristics



Future Transport Fuels



Example Portfolio

- Colorado Renewable Energy Society Life Member Fund
- Goals:
 - Create and Endowment for CRES while investing in EE/RE.
- Growth orientation
- Moderate Risk Tolerance (High ability to take risk, moderate willingness)
- No near-term liquidity needs.
- Small account size = relatively undiversified portfolio.

Example Continued

- Account value: \$7,565 (5/6/08)
- Current Holdings:
 - Ormat (ORA) – Geothermal – 18%
 - Portec Rail (PRPX) – Rail – 18%
 - General Electric (GE) - Diversified – 11%
 - Electro-energy (EEEI) – Batteries – 11%
 - Cree (CREE) – LEDs – 11%
 - Composite Tech (CPTC) – Wind & Transmission – 8%
 - SDD + BGT: Non-RE diversifiers – 23%

Questions?

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