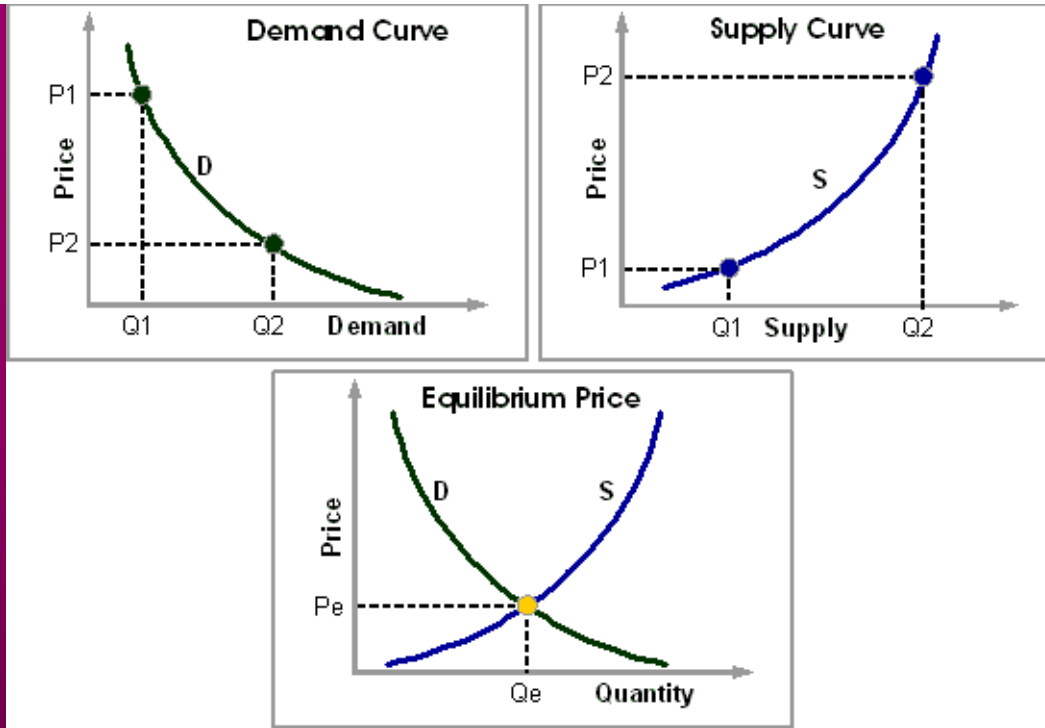


Washington State Policy & Economics of Biodiesel

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If it were
only this
easy.

Whose
economics
farmer
refiner
consumer
?

ECONOMIC - \$
ENVIRONMENTAL - cleaner
SOCIAL - urban / rural

context

- 1 billion gallons distillate fuels use in WA
- 6.5 gallon of gasoline per year
- Growing world demand for oil – 70 mbd
- 3 gallons per day per person US – 20 mbd
- Oil Supply peaking – new price level
- Demand will double in 50 years
- Large pollution challenge – air & water
- Diversify rural economies
- All imported

Why now?

- \$30m a day leaves our economy - \$11b year
- Energy security
- Improved technologies
- Public support
- Rural diversification
- Clean air
- Clean water
- Do want to adapt to climate change?
- Would we rather buy these technologies or create them?

Biofuels – the value chain

- Grow seed – harvest – store
- Crushing
 - Oil - fuel
 - feed – canola – 250k cows in Yakima valley
 - Fumigants- mustard – rotation with potatoes
- Processing – biodiesel & 10% glycerin
- Refining – lubricants
- distribution – retailing - marketing

Washington State Policy

- Lead with government usage
- Clear permitting path
- Coordinate agencies
- Improve financing climate – public/private
- Can't control markets for ag or oil
- Can't control farmers or entrepreneurs
- Work with existing infrastructure
- Structure market to expand production
- Quality – quality – quality
- It will be hard but worth it
- Let's win – let's make money

Key questions

- Oilseed crops – will growers grow
 - Rotations - varieties
- Ancillary markets
 - Fertilizer, feed, fumigants, bioproducts
- Optimal locations - seed –use
 - Co-locate – crusher, feed mill, refiner
- Transportation advantage – can we use it
- Horizontally integrated - vertically
- Ownership models - investment

Private - government

- vision
- risks
- control
- Investment
- Innovate
- manage
- Clear framework
- Prevent problems
 - Safety -
environmental
- Create markets
- Cajole & assist
- Research
- quality

Activities underway

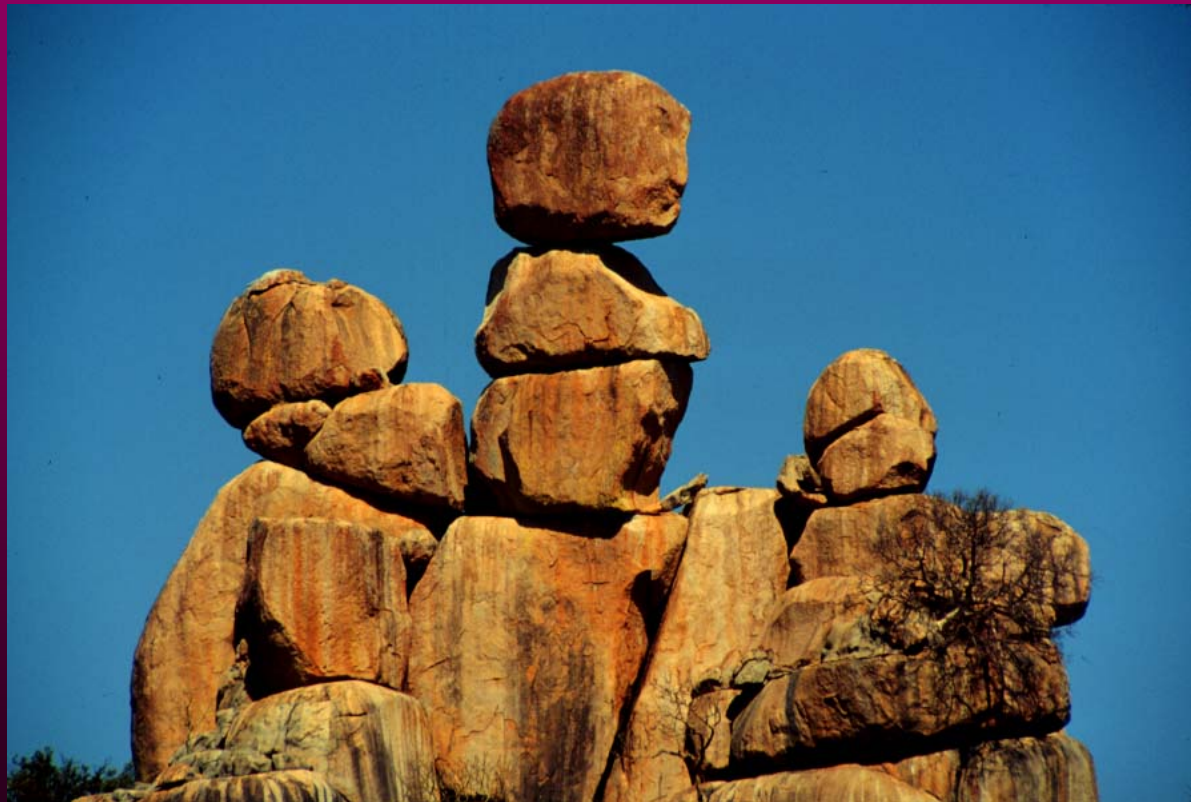
- Cluster summary
- Bioproducts
- Business models
- crop research
- Fleet training
- regulatory framework
- Agency coordination
- Grant assistance
- Web based intake tool
- Ancillary products

Policy puzzle for oil usage

Plan better
Improve alternatives
Improve equipment
Better fuels

Be creative
Try things
Lead
Innovate

Embrace change
Have fun



Keys to success

- solid business plan
 - Buyers
 - Manufacturing
 - Service
 - Management
 - marketing
 - Distribution channels
 - financing – equity – debt - grants

The end

- We can do it
- Let's do it
- Have fun doing it
- Make money doing it
- Work together doing it
- Let's do it
- Just do it