How can India make a success of its ethanol program

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The flow of my presentation

- Policies in India till now
- Lessons learnt from past
- What needs to be done
- The success stories abroad
- Conclude …

Policy Initiatives of Government of India

- 2002: 5% ethanol blending blending programme first initiated
  - But was not made mandatory
  - The programme did not take off
- 2007: 5% ethanol blending made mandatory
  - Fixed procurement price introduced for the first time
  - Programme moved forward in fits and starts
- 2010: Programme was reviewed again by Government
  - Provisional price of Rs.27 per litre ex-factory was announced
  - An Expert Committee was appointed for a formula based fixed pricing for ethanol, which recommended a formula linked to petrol price

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Policy initiatives …….

- <u>Nov. 2012</u>: Government shifted to market determined price (instead of fixed pricing policy).
  - 5% mandatory blending at all-India level be achieved
  - Flexibility to go upto 10% in some States, to achieve all-India 5%
  - Oil companies were allowed to import ethanol to meet any shortfall
- But, later, on request of Petroleum Ministry in June, 2013:
  - Procurement to be restricted to ethanol produced <u>only from domestic molasses</u>
  - Achieve mandatory blending, wherever sufficient ethanol is available

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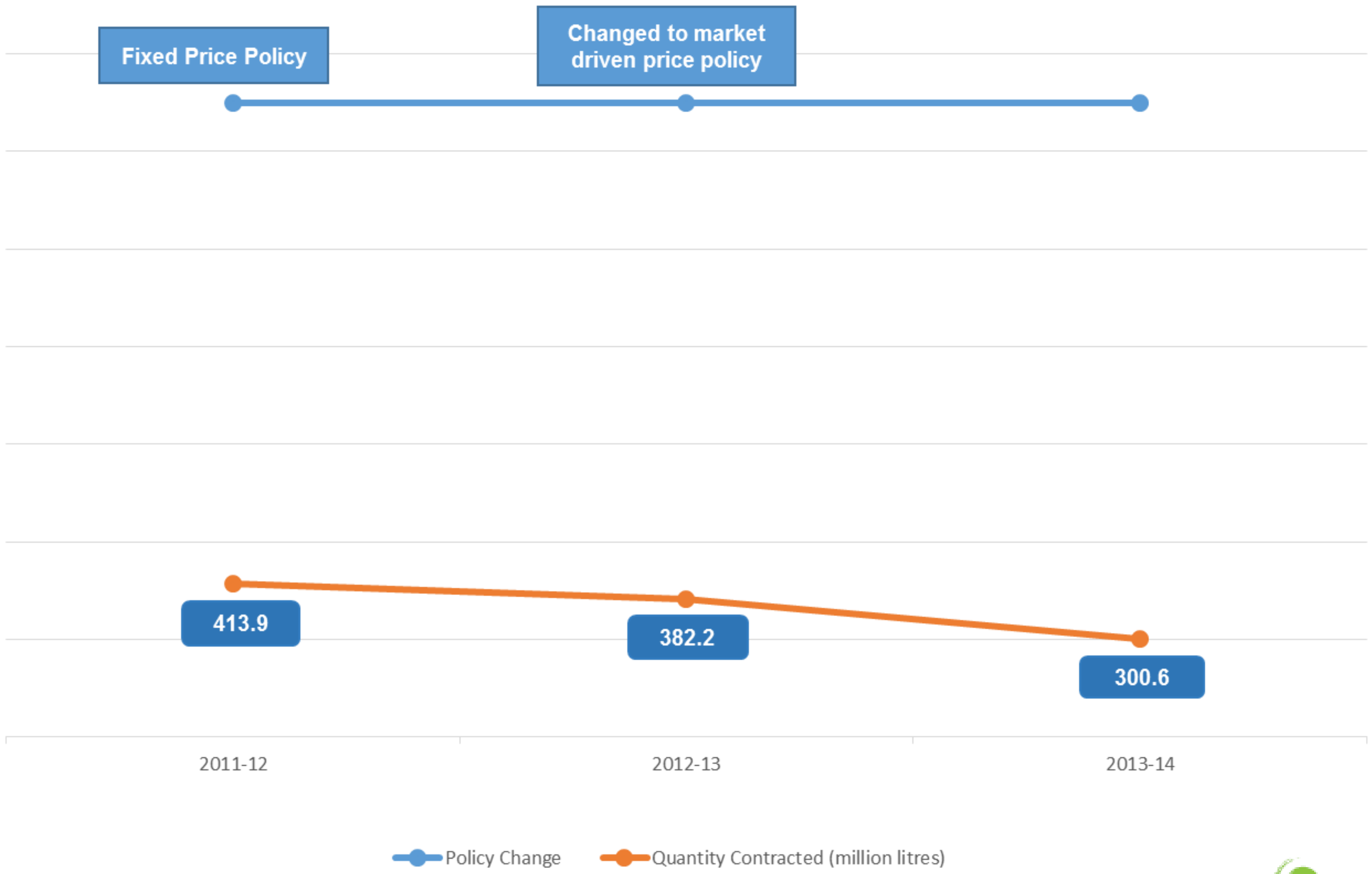
What this changed policy of June, 2013 meant

June, 2013 policy	Implications
Achieve mandatory blending, wherever sufficient ethanol is available	Technically, 5% blending no longer mandatory
Ethanol produced only from domestic molasses to be procured	a)Alternate feedstock like cane juice etc. could not be used b)Ethanol from imported sources not to be used

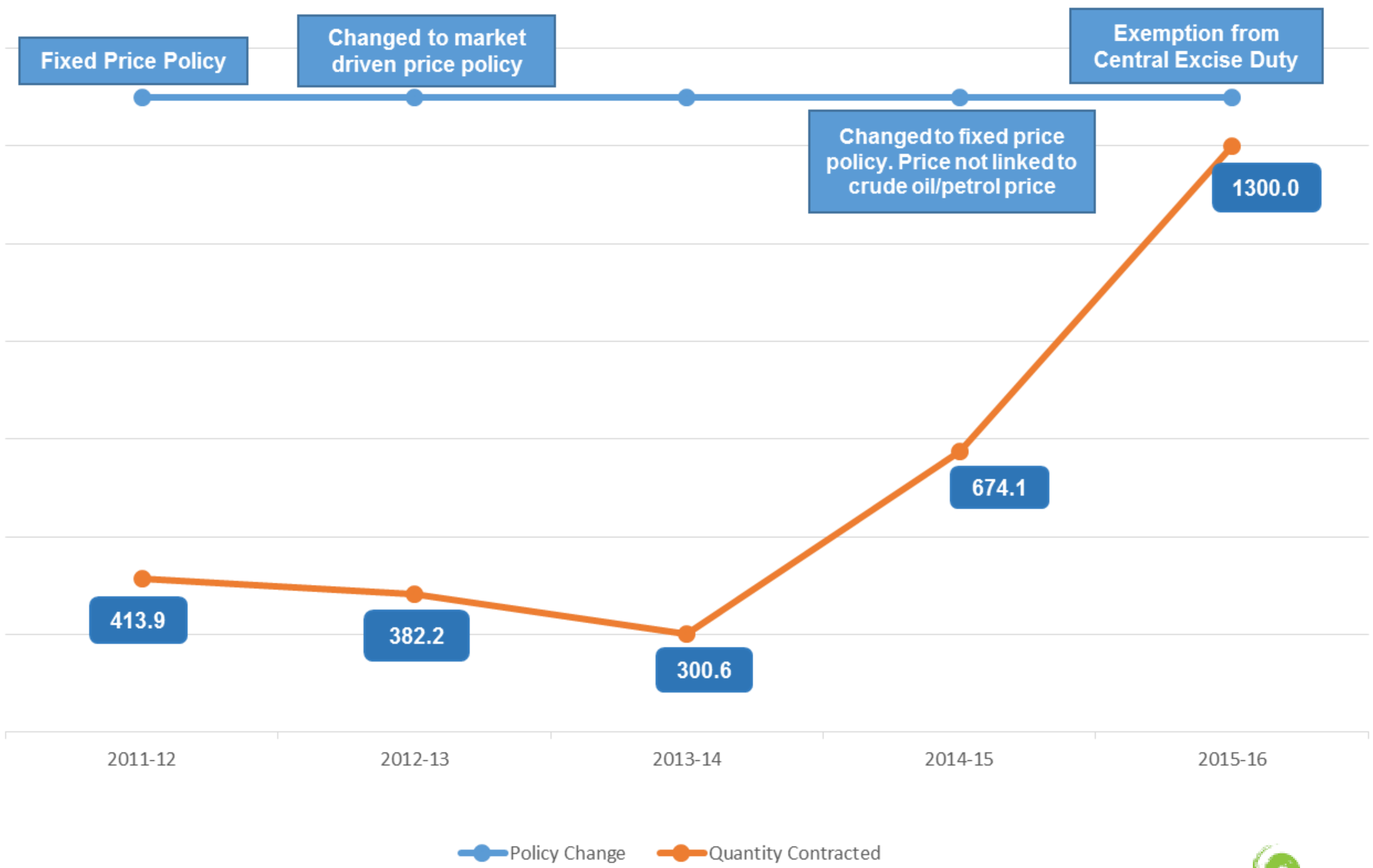
Ethanol supplies from 11-12 to 13-14 not good



New Policy by Modi Government: Dec, 2014

- Fixed pricing policy for ethanol
  - Linked to cost of production or sugar price realisation
- Ethanol pricing policy now stands on 3 pillars
  - To benefit the sugarcane farmers
  - To reduce environmental pollution
  - To reduce net oil import bill
- Central excise duty of 12.5% waived for contractual period Dec ‘15 to Nov ’16

Policy changes and supplies/contracts



Lessons learnt in last 8 years ……

- A <u>mandatory</u> ethanol blending programme is important
  - With a clear blend target, but with a strong will to ensure the mandate
- A fixed pricing policy for ethanol procurement has helped
  - De-linked from the uncertainties of global crude price movements
  - Quicker finlisation of contracts
- Financial incentives like tax deductions or waivers encourage ethanol production and supplies

Hurdles in smooth movt. & price realisation

- State excise permits needed for moving denatured ethanol
- Taxes & duties levied by most State Governments on ethanol reducing net realisation to suppliers

To overcome movement problems …..

- Central Govt. amended the Law (IDR Act) in May, 2016
  - Declaring that only alcohol for human consumption is in State power
  - Thus, denatured ethanol is clearly under Central Govt.
  - Meaning that States cannot legislate, control, tax etc. denatured ethanol

Country can move from current 4% blend to 10% ..

Feedstock	Produced annually (million tons)	Alcohol production (million litres)
C-Heavy Molasses or Final Molasses	12	3120
B-Heavy Molasses or Intermediate Molasses	18	5850

Sectors	Annual requirement (mn litres)		Annual requirement (mn litres)	
Potable liquor		1000		1000
Blending with petrol	@ 5%	1300	@ 10%	2600
Chemical industry		500		500
Total		2800		4100

So, to move to 10% blending, what is required??

In other words, what is required to divert B molasses away from sugar to ethanol

Supply side needs

- Pricing to be good
  - To compensate the sugar millers for loss of revenue from sugar
  - 1 kilo of sugar so sacrificed gives 0.6 litres of ethanol
  - Hence, price of ethanol has to be at least 1.5 times price of sugar
  - Current all India average ex-mill price of sugar is Rs.34 per kilo
  - Hence, ethanol procurement price at distillery gate should be Rs.51 per litre
  - However, it is around Rs.41 per litre currently

Supply side needs contd.

- Ethanol producing capacity needs to be augmented
  - Current annual capacity is around 2250 mn litres
    - 1750 mn litres with sugar mills and 500 mn litres with stand alone distilleries
  - Out of 530 operational sugar mills, only 130 have ethanol capacities
  - Huge opportunity and potential for investment

Demand side needs

- Storage capacities at oil depots need to be augmented
- Increase blend levels in ethanol producing States
- To encourage supplies to deficit States, compensate supplier for longer distance depots

Policy side needs

- State Governments need to be positive on ethanol
  - Remove taxes/duties on ethanol
  - Stop controlling movement of ethanol
- Long term clarity on pricing
  - Announce price for next 5 years, linking to sugarcane price movements
- Tax incentives and deductions on a long term basis
  - Excise duty waiver which got withdrawn in Aug, 16 be restored
  - Clear announcement of the tax waiver on ethanol for next 5 years

US Government strongly supported ethanol

- Upto 10% blending in US started in the late 1970s
- Blending programme got a push with the discovery that MTBE (methyl tertiary butyl ether) was contaminating groundwater
  - MTBE's use as an oxygenate additive was widespread to reduce CO emissions
- Steep growth in ethanol was driven by federal legislation aimed to reduce oil consumption & enhance energy security

US Government gave tax benefits

- Tariff and tax credits
  - Since 1980s to 2011, domestic ethanol producers were protected by a 54% per gallon import tariff
  - From 2004, blenders of transportation fuel received a tax credit for each gallon of ethanol they mix with gasoline
- As of 2011, blenders received a US$ 0.45 per gallon tax credit
  - Small producers recd. An additional US$ 0.10 on first 15 mn gallons
- 'Environmental Working Group' estimated that cumulative ethanol subsidies between 2005 to 2009 were US$17 billion

Ethanol grew in Brazil only with Govt. support

- Mandatory blending between 1976 to 1992 of 10% to 22%
  - In 1993 the blend was fixed at 22% for the country, with freedom to set different levels in different areas
  - From 2003 limits were set for max. and min. blends between 18 to 25%
- Flex fuel vehicles introduced in 2003
  - As of June, 2015 flex fuel cars crossed 25.5 mn units and flex motorcycles totaled over 4 mn
- Differential tax rates for Ethanol and gasoline followed both by Federal and State Governments

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Thailand gives tax benefits

- Thailand has a model of incentivising higher blend percentages through differential tax rates

Blending %	Tax rate	Oil & Cons. Fund	VAT
Unblended	7.70	10.25	3.14
GSG95-E10	6.93	3.55	2.65
GSH91-E10	6.93	1.45	2.49
E-20	6.16	(-)1.05	2.33
E-85	1.16	(-)11.35	1.60

- Note: Rates are in Thai Baht
- Source: FO Licht Conference, Bangkok, Feb, 2014

Concluding ....

- Necessary to continue with the fixed pricing policy
- Differential tax rates for petrol and ethanol have been key in the success of the ethanol programme in US, Brazil & Thailand
  - Excise duty waiver in India, which lasted only for 8 months should be immediately restored
- Movement of ethanol should be freed up
- Ethanol prod. & storage capacities to be urgently augmented
  - Large investments reqd, for which long term stable policies needed
- Necessary to recognise that ethanol improves ‘air quality’

Thank You