

Overview

- Introduction
- Status quo
 - Electric motor market trends
 - National electric motor distribution
 - Electric motor repair industry
- Incentive scheme

Introduction

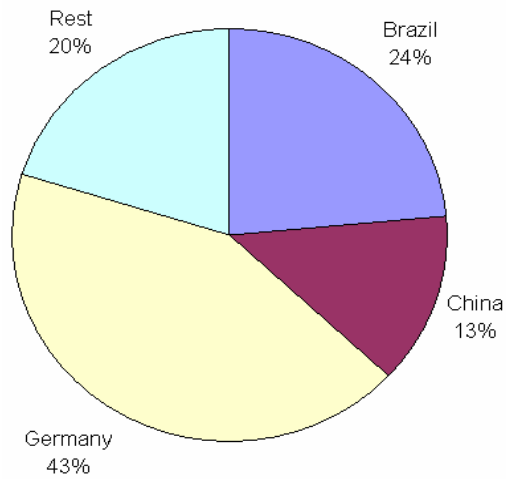
- Globally, motor systems account for ~40 % of industrial electricity, local estimates at >60 %
- ESKOM DSM expanding its scope
- Price and awareness are major market barriers
 - Background of relatively cheap electricity prices
- DSM is proposing a financial incentive scheme **to support the market pull** for EE motors and
- Intends to work with suppliers

Motor Market Trends

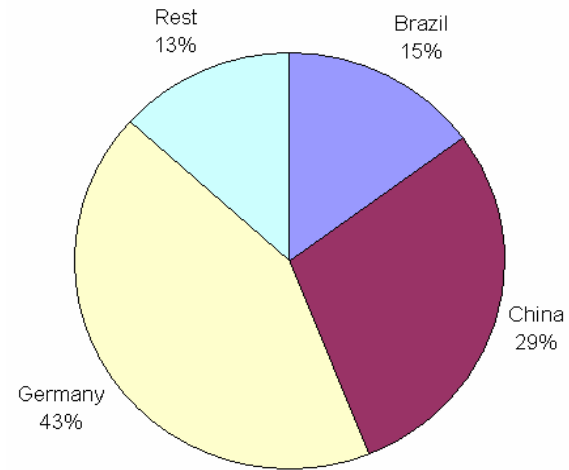
- No local manufacturer of EE motors
- Nearly 1.5 million motors imported in the last three years
 - South African also serves Africa!
- Imported with tariff duty
- EE motors about 20 % more expensive
- Currently, no local minimum efficiency levels

Motor Market Trends...

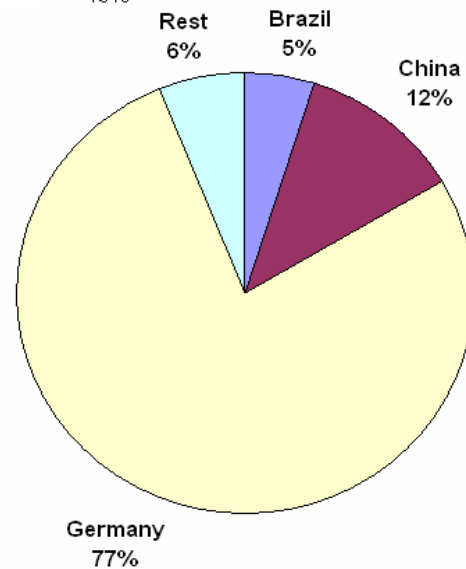
2004



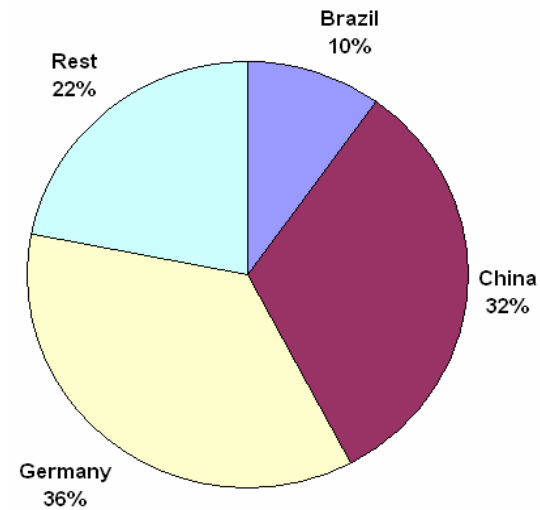
2005



2006

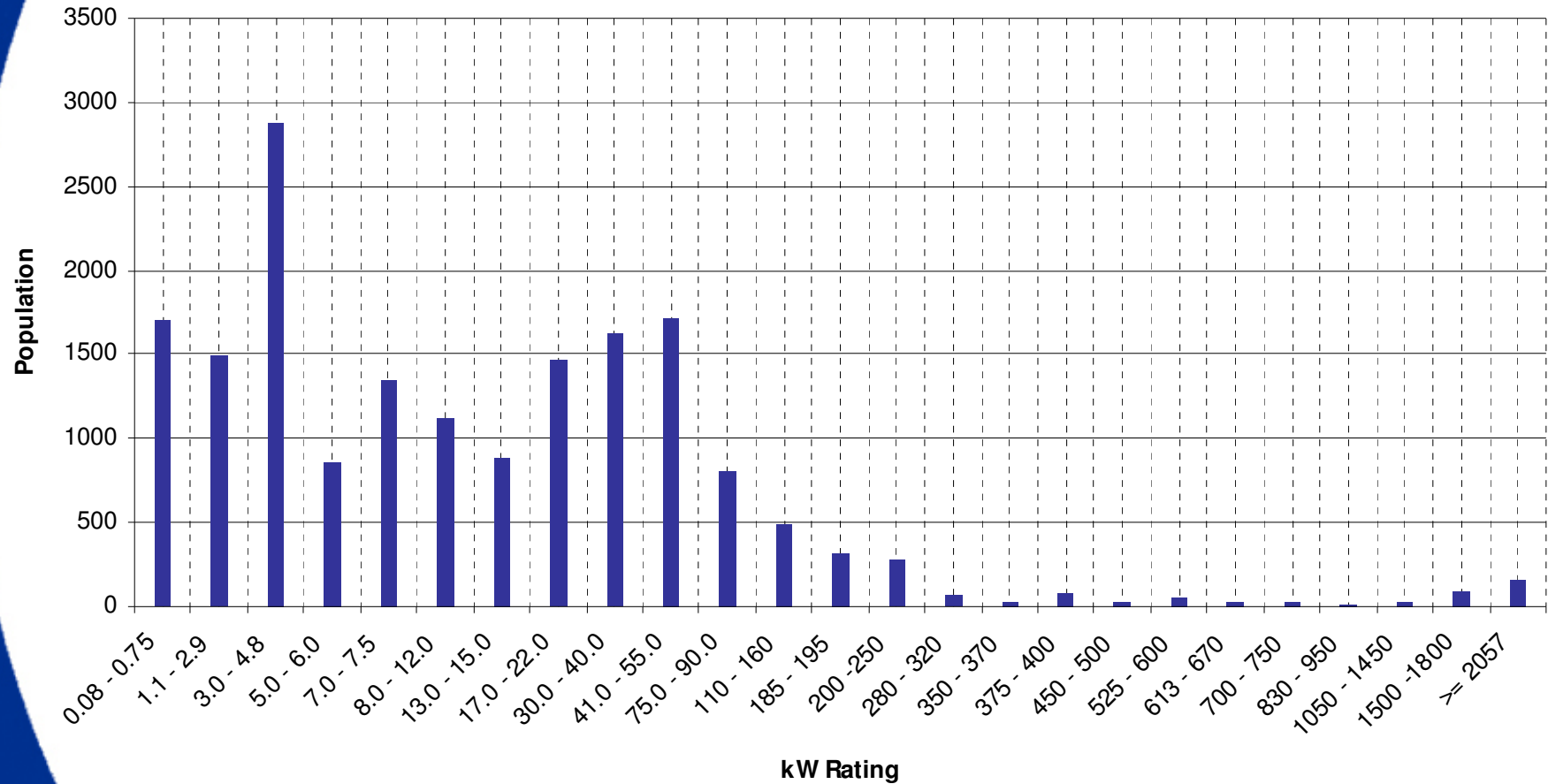


2007*



to date

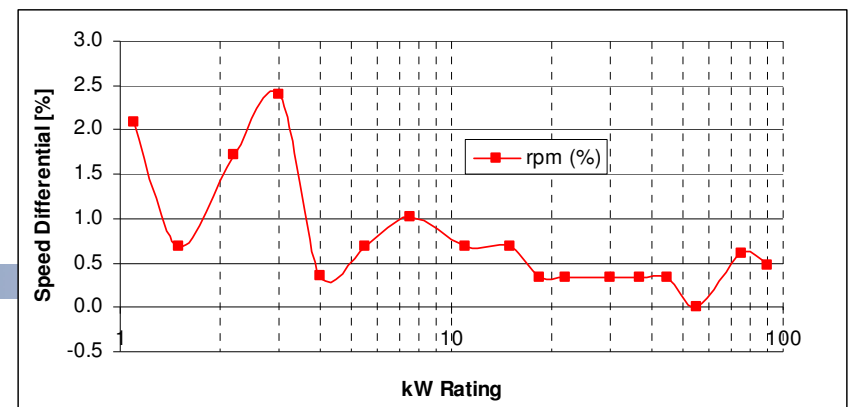
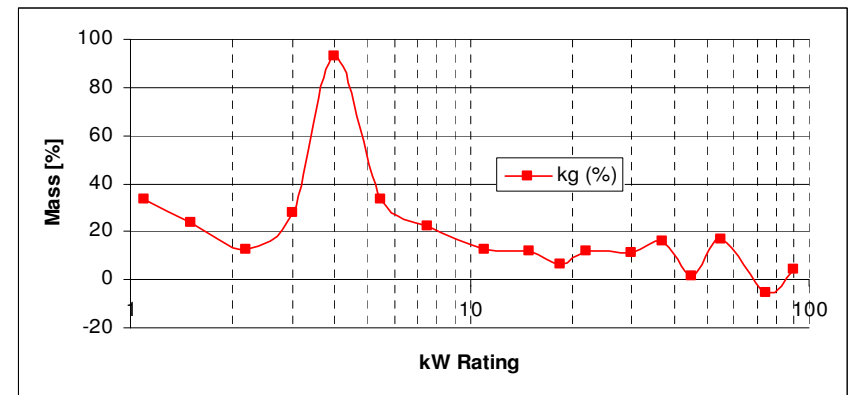
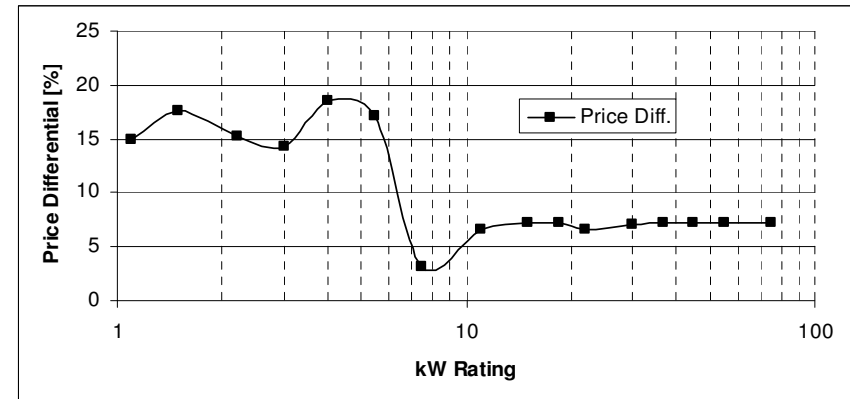
Installed Motor kW*



As on May 9th

Identified Hurdles

- Economic
 - EE motor prices
 - Relatively cheap electricity prices
- Technical
 - Reliability
 - Extra weight and speed
- Regulatory
 - No control over the imports
- User
 - Low awareness level
 - “I’ve always done things this way!”
- Institutional related
 - Procurement and engineering departments



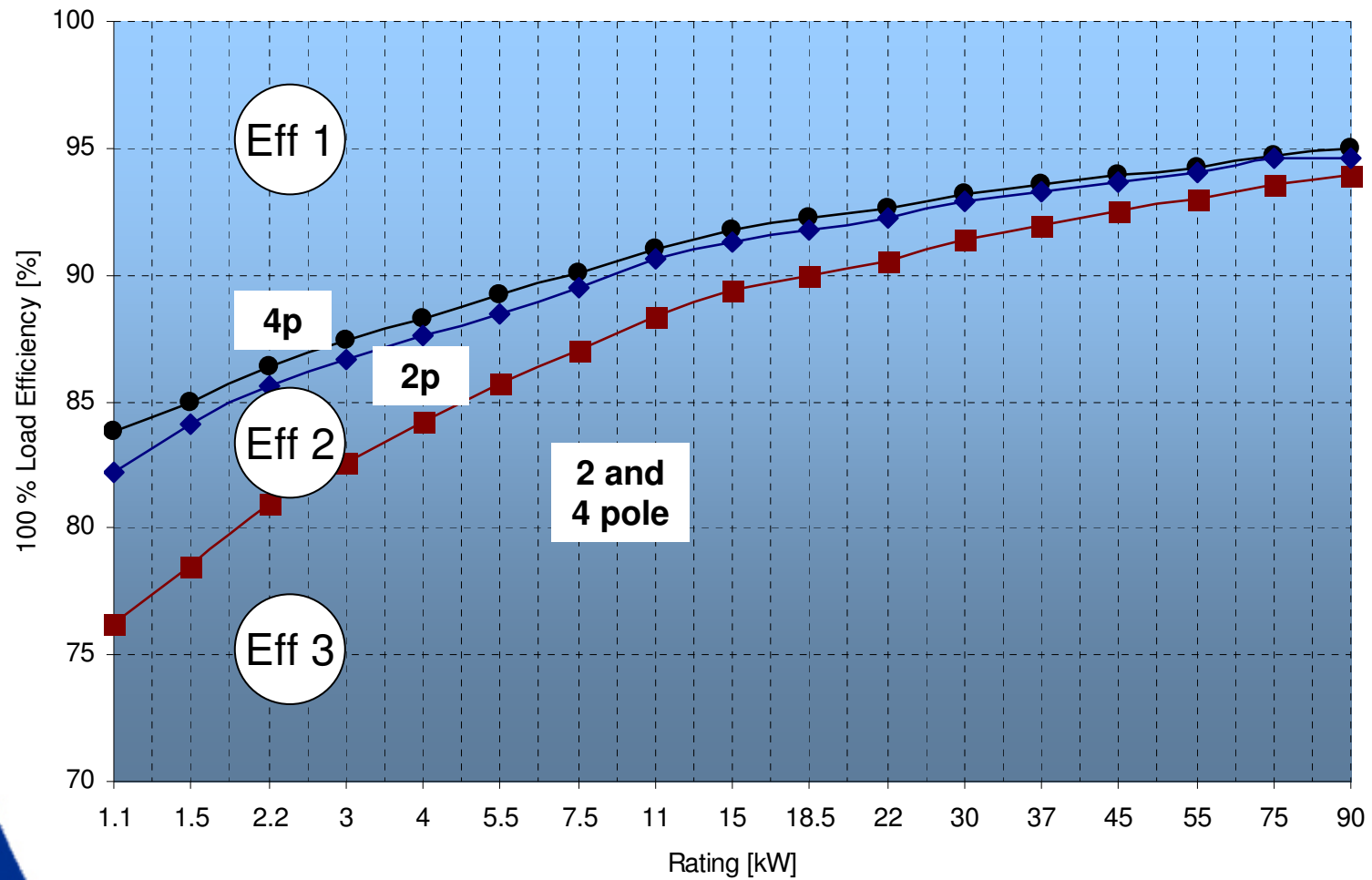


How DSM plans to minimise
the hurdles?

General Conditions

- For TEFC, 3-phase, 2 and 4 pole general purpose induction motors
- kW range 1.1 – 90 kW
- Labelling: Eff 1
- For new applications or retrofits

Target Range

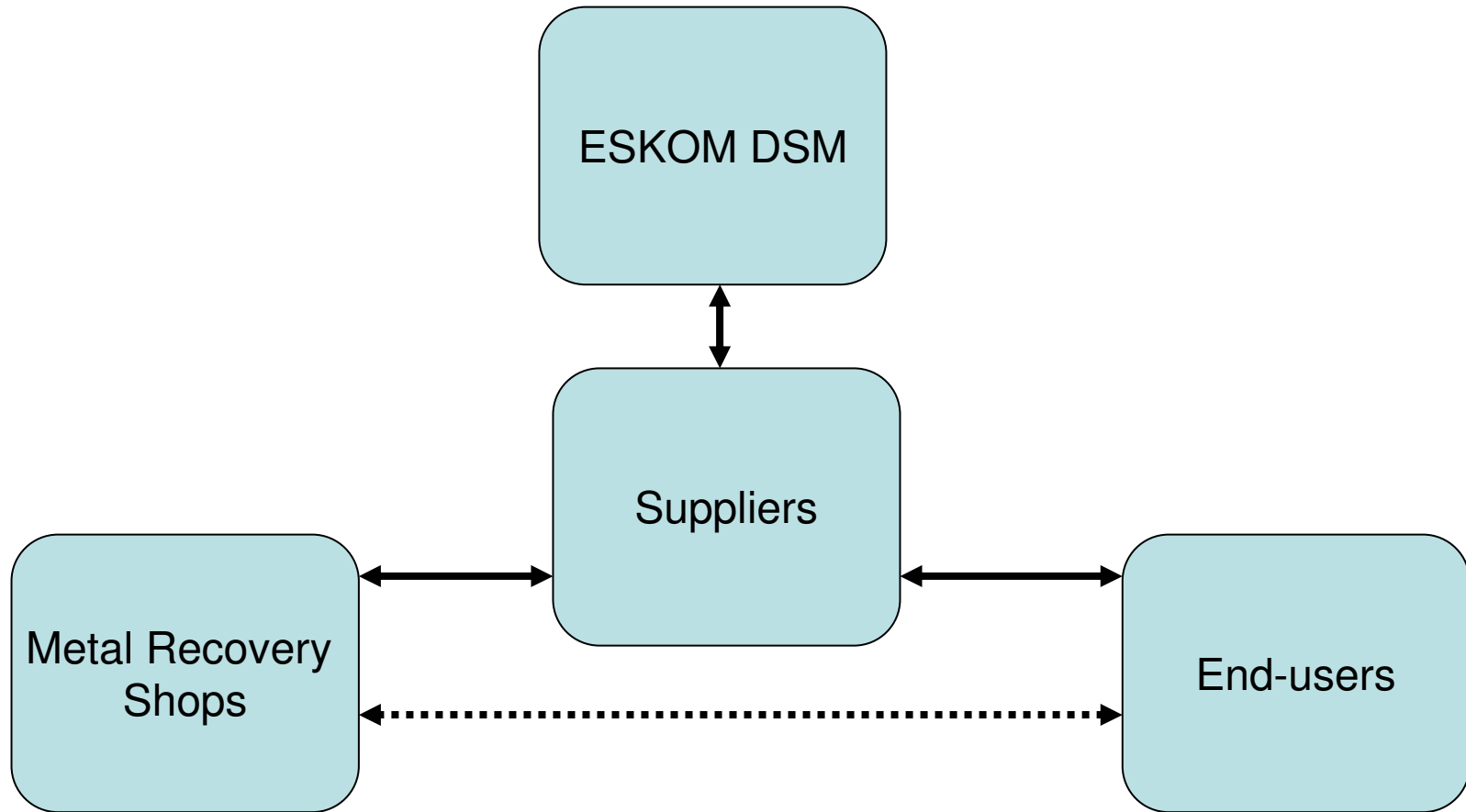


Eligible Motors

kW Rating	4-pole		2-pole	
	Eff 2	Eff 1	Eff 2	Eff 1
1.1	76.2	83.8	76.2	82.2
1.5	78.5	85.0	78.5	84.1
2.2	81.0	86.4	81.0	85.6
3	82.6	87.4	82.6	86.7
4	84.2	88.3	84.2	87.6
5.5	85.7	89.2	85.7	88.5
7.5	87.0	90.1	87.0	89.5
11	88.4	91.0	88.4	90.6
15	89.4	91.8	89.4	91.3
18.5	90.0	92.2	90.0	91.8
22	90.5	92.6	90.5	92.2
30	91.4	93.2	91.4	92.9
37	92.0	93.6	92.0	93.3
45	92.5	93.9	92.5	93.7
55	93.0	94.2	93.0	94.0
75	93.6	94.7	93.6	94.6
90	93.9	95.0	93.9	94.6

* Adopted from the EU curves

Proposed Model

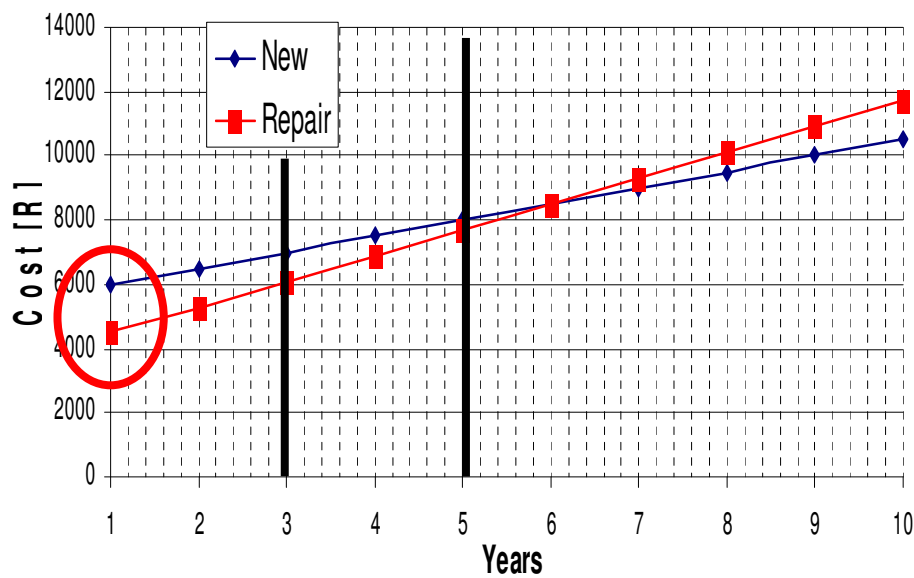


Desired Outcome

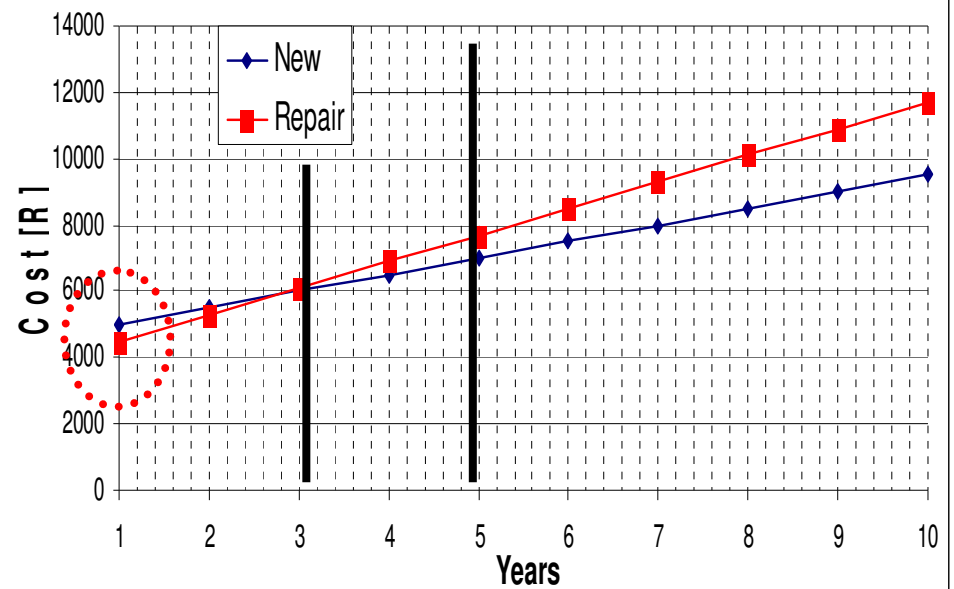
- Users
 - Set as preferred motors Eff 1
 - Would see benefits of Eff 1 motors
 - Would consider not repairing motors less than 45 kW
- Suppliers
 - Marketing Eff 1 motors
 - Stop stocking Eff 3 motors
- DSM
 - DSM would see the reduction in demand

Repair vs New

Repair Costs 60 % without DSM Subsidy

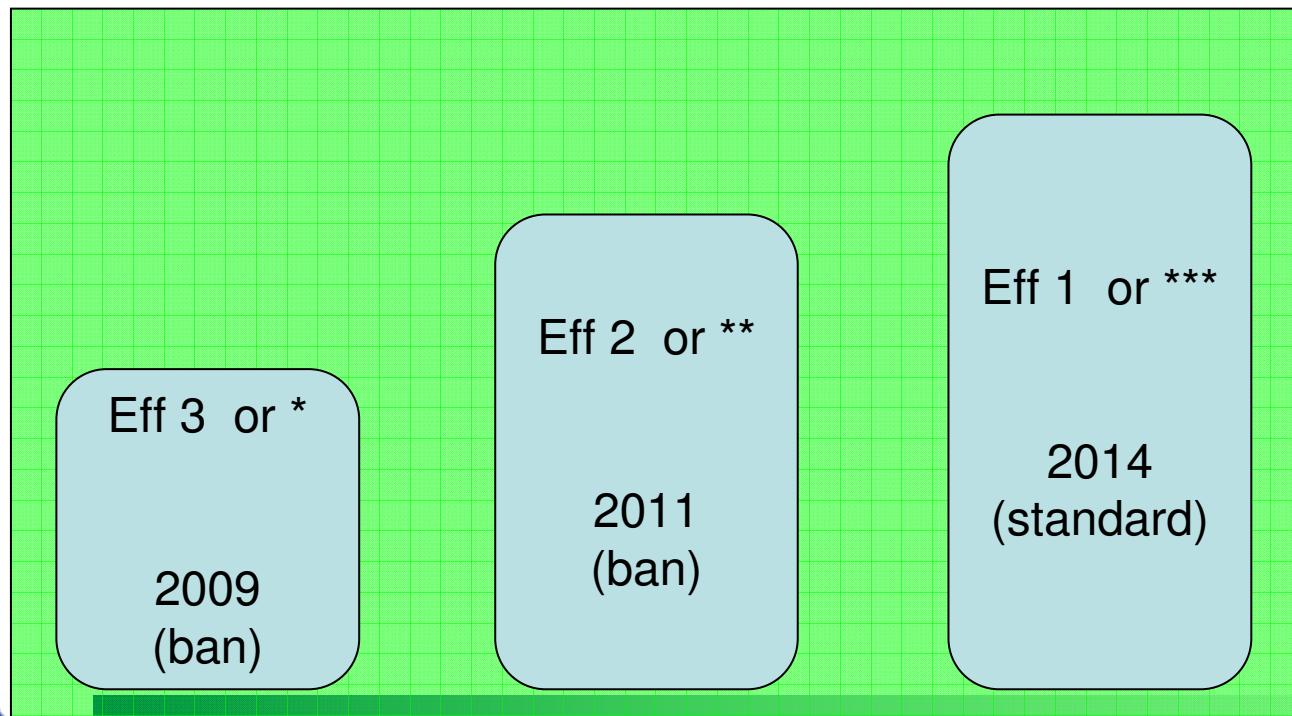


Repair Costs 60 % with DSM Subsidy



Regulatory Hurdle

- Wish for DME to set a date to eliminate Eff 3 (standard) motors



International MEPS

Classification	Mandatory	Voluntary
Eff 1	AS/NZ - 2006 Brazil – 2008 Canada (80 %) Mexico (100 %) USA (80 %)	AS/NZ (80 %) Brazil (15 %) China (19 %) EU (6 %) India (2 %) Japan (1 %)
Eff 2	AS/NZ (10 %) Brazil (85 %) China (80 %)	EU (84 %) India (48 %) Japan (99%)
Eff 3		EU (10 %) India (50 %)

Calculation Tools

- US: MotorMaster
- Europe: EuroDEEM