Sustainability Strategy – Technology Migration

2007 — **2011** — **2020** — **2030**

Near Term
Begin migration to advanced technology

Mid Term
Full implementation of known technology

Long Term
Continue leverage of Hybrid technologies and deployment of alternative energy sources

Near Term

- Significant number of vehicles with EcoBoost engines
- Electric power steering – begin global migration
- Dual clutch and 6 speed transmissions replace 4 & 5 speeds
- Flex Fuel Vehicles
- Add Hybrid applications
- Increased unibody applications
- Introduction of additional small vehicles
- Battery management systems – begin global migration
- Aero improvements
- Stop/Start systems (micro hybrids) introduced
- CNG/LPG Prep Engines available where select markets demand

Mid Term

- EcoBoost engines available in nearly all vehicles
- Electric power steering - High volume
- Six speed transmissions - High volume
- Weight reduction of 250 – 750 lbs
- Engine displacement reduction aligned with weight save
- Additional Aero improvements
- Increased use of Hybrid Technologies
- Introduction of PHEV and BEV
- Vehicle capability to fully leverage available renewable fuels*
- Diesel use as market demands
- Increased application of Stop/Start

Long Term

- Percentage of Internal combustion engines dependent on renewable fuels
- Volume expansion of Hybrid technologies
- Continued leverage of PHEV, BEV
- Introduction of fuel cell vehicles
- Clean electric / hydrogen fuels
- Continued weight reduction actions via advanced materials