Climate Change Office
Department of Environment
Islamic Republic of Iran

Iran's Readiness for Implementing CDM

by

Dr. Mohammad Soltanieh

National Project Manager


ARMENIA
Yerevan
AZERBAIJAN
Baku
Türkmenbashi
Nebitdag
TURKMENISTAN
UZBEKISTAN
Gyzylarbat
Charjew
TURKEY
Van
Caspian Sea
ARDABIL
Astārā
Tabriz
Orūmiyeh
Lake Urmia
Ashgabat
Mary
Tejen
Bojnurd
Bandar-e Torkeman
Basht
Zanjān
ZANJĀN
MAZANDARAN
Shahrūd
Mashhad
Sarakhs
Saragt
railroad u/c
Gushgy
Irbil
Mahābād
Dezful
Tehrān
SEMNĀN
Semnān
KHORĀSĀN
Karkūk
KORDESTĀN
Sanandaj
HAMADĀN
Hamadān
Dasht-e Kavir (salt desert)
Kavir-e Namak
Herāt
Harīrūd
KERMĀNSHĀHĀN
Bākhtarān
Arāk
MARKAZI
Kāshān
Ilām
Khorramābād
LORESTĀN
ESFAHĀN
Baghdad
IRAQ
ILĀM
Birjand
AFGHANISTAN
Esfahān
Farāh
Tigris
Shahr-e Kord
CHAHĀR MAHĀLL VA BAKHTIĀRI
YAZD
Yazd
Bāfq
Euphrates
KHUZESTĀN
Ahvāz
An Nāsirīyah
Al Basrah
Yāsūj
Kermān
Umm Qasr
Abādān
Bandar-e Khomeyni
KOHKILUYEH VA BUYER AHMADI
KUWAIT
Shatt al Arab
KERMAN
BUSHEHR
Shīrāz
Sīrjān
Bām
Zahedān
PAKISTAN
Kuwait
FARS
Nok Kundi
SAUDI ARABIA
Bandar-e Bushehr
Bazi
Kangān
HORMOZGĀN
SISTĀN BALUCHESTĀN
Persian Gulf
Bandar-e Abbās
Strait of Hormuz
Manama
BAHRAIN
Bandar-e Lengeh
OMAN
Jāsk
QATAR
Dubai
Administrative Line
Bandar Beheshti
Gwadār
Doha
Abu Dhabi
Gulf of Oman
Arabian Sea
UNITED ARAB EMIRATES
no defined boundary
Muscat
De Facto Boundary
OMAN
Boundary representation is not necessarily authoritative.
Iran
International boundary
Province (ostān) boundary
National capital
Province (ostān) capital
Railroad
Road
0
250 Kilometers
0
250 Miles
Lambert Conformal Conic Projection, SP 12N/38N
20% Over Normal
Normal
40% Under Normal
60% Under Normal
80% Under Normal
Base 802511 (R01078) 9-96

PRESENTATION OVERVIEW

- GHGs Inventory and its Emission Trends
- Rationale for CDM Projects in Iran
- Proposed Policies for GHGs Abatement
- Problems and Barriers on CDM Projects Implementation

Keystone for Better Implementation of the CDM

The potential of CDM depends on :

- Economic strength and growth rate of the host country,
- The level of motivation of investing country, and
- Mutual trust of both sides.

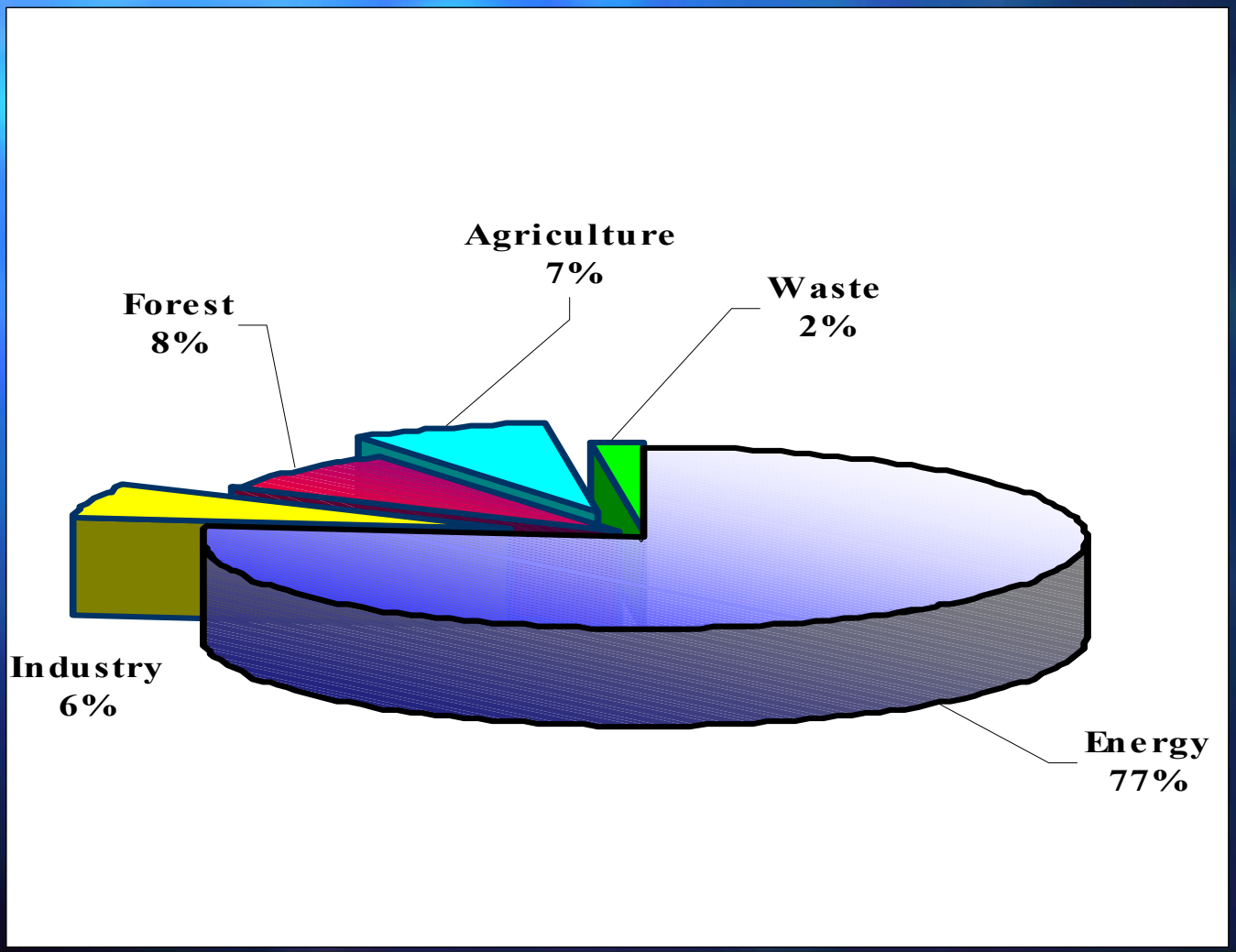
National GHGs Inventory

Summary of GHGs Inventory of I.R. Iran in 1994 (Gg)

n Sources	CO_2	CH_4	N_2O
1.Energy	285,891	1559	8.79
Fuel Combustion	254,354	80.58	8.79
Fugitive Emission	31,537	1478	0
2. Industrial processes	24,754	1.85	2.2
3. Agriculture	0	643.09	54
4. Forestry	31,416	6.97	0.049
5. Waste	0	326.71	4.64
Total	**342,062**	**2537**	**70**
GWP	1	21	310
Total CO_2 Equ.	**342,062**	**53,290**	**21,657**

National GHGs Inventory

Contribution of Different Sectors to total GHGs in 1994 (Gg)



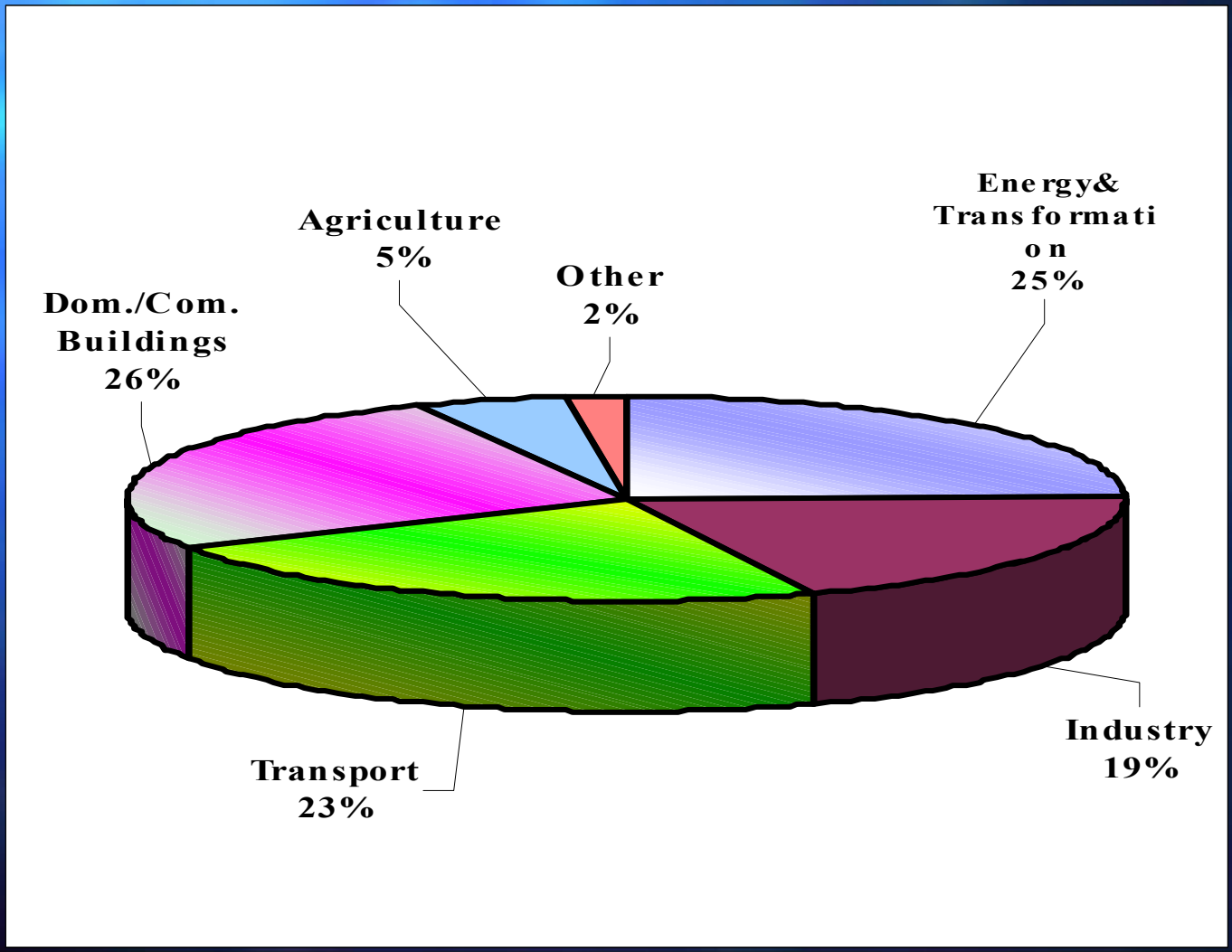
National GHGs Inventory

CO_2 Emissions from Different Energy Sub-sectors(Gg)-1994

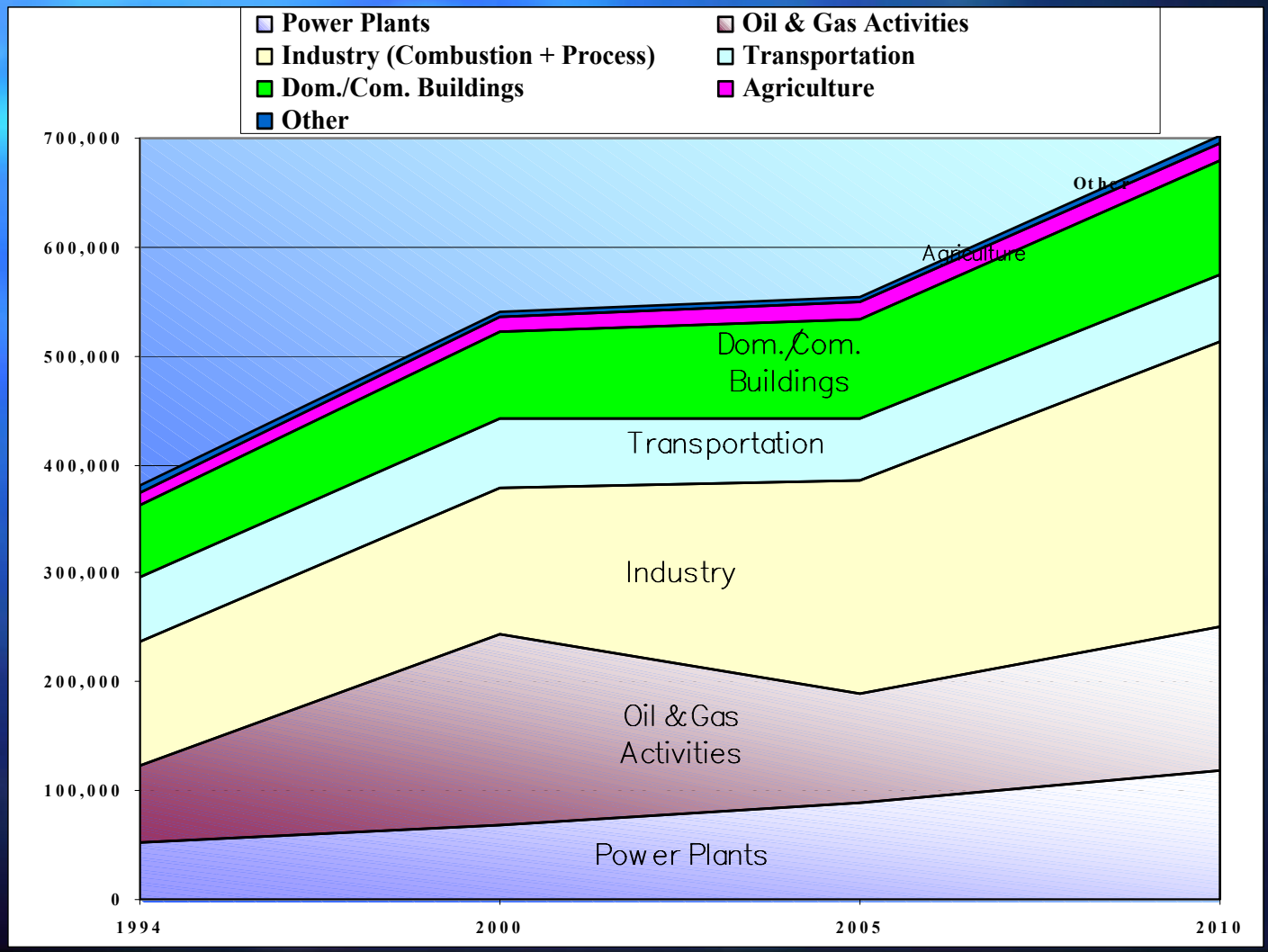
Sources	CO_2 Emissions
Energy &Transformation	63,197
Industry	48,179
Transportation	58,709
Commercial and Residential Buildings	66,512
Agriculture	12,689
Other	5,067
Sub- total	**254,354**
Fugitive Emission	**31, 537**
Total	**285,891**

National GHGs Inventory

Contribution of Energy Sub-sectors to CO_2 Emissions (1994)



GHGs Emission Trends in Baseline Scenarios for Energy Sector



Rationale for CDM Projects in the Country

- Energy intensity in different economic sub-sectors in Iran is very high, thus the potential for EE & EC and GHGs reduction is high.
- The associated gases from oil production can be recovered and used for re-injection to wells for enhanced oil recovery (EOR), for conversion to liquid products (GTL), or for production of energy at the well head (Well-to-Watt).
- The cost of GHGs reduction in Iran is relatively low compared to developed countries.
- The rich natural gas resources makes a high potential for fuel switching.

Rationale for CDM Projects in the Country (continued)

- The capacity for renewable energy sources such as solar,wind and geothermal is high. The average solar radiation intensity in Iran is about 2000 kWh/m2 and a few solar projects such as Shiraz 250 kW power plant are in operation. The potential for wind energy is 6500 MW and by 2004 the capacity of wind power will reach 110 MW. Two geothermal power plants with 1200 MW capacity will come into operation by 2004.

Rationale for CDM Projects in the Country (continued)

- There is good capacity for small hydro power plant projects in the framework of CDM (by the end of 2010, the capacity of hydro power will increase from 2000 MW to 10,000 MW).
- In the forestry sector, because of high rate of desertification in recent years (1% annually), there exists favorable capacity for reforestation & afforestation activities.
- The cultivation method in Iran is in a transitional phase and therefore there is good potential for GHGs reduction by applying modern agricultural methods.

Policies and Measures for GHGs Abatement

- Oil & Gas Activities
  - Fuel switching
  - Energy efficiency
  - Gas injection to wells
  - Collection and use of flared gas, needs to be supported by CDM and Technology Transfer in the following areas:
    - Gas-to-Liquid Processes (GTL)
    - Oxidative Coupling of Methane (OCM)
    - Dimethyl Carbonate (DMC)
    - Well- to-Watt (WW)

Policies and Measures for GHGs Abatement (continued)

- Power generation
  - Fuel switching
  - Hydro power plants
  - Energy efficiency
    - Combined cycle
    - Combined heat & power
  - Small power plants
  - Renewable & clean energy resources
    - Nuclear
    - Solar and wind
    - Geothermal, wave, tidal and hydrogen
- Industries
  - Fuel switching and energy efficiency

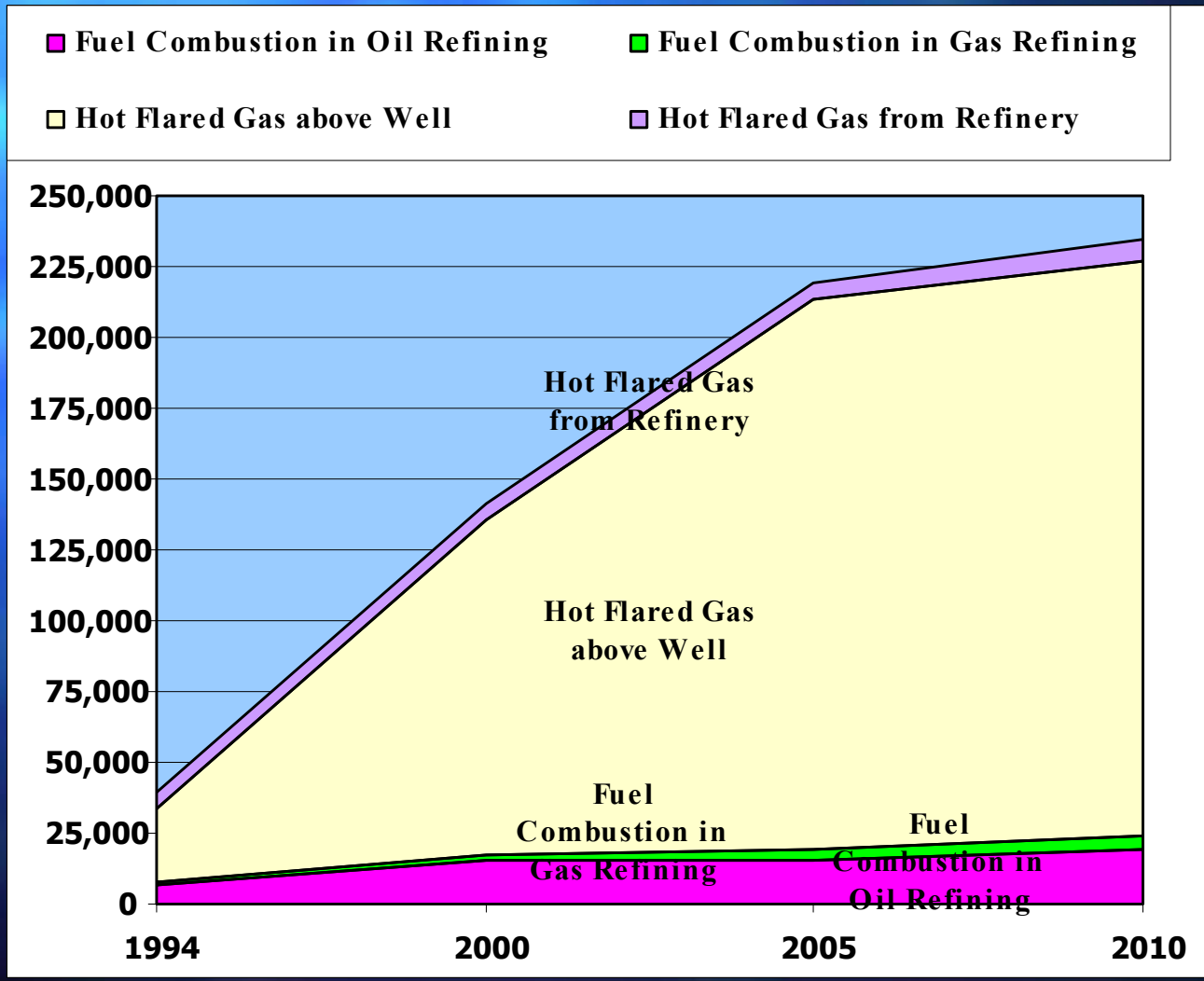
Policies and Measures for GHGs Abatement (continued)

- Transportation
  - Improvement of fuel quality & fuel pricing
  - Improvement of public transportation
    - Fleet increase
    - Conversion to CNG
    - Catalytic converter & participate trap
    - Expansion of Metro & LRT
    - Scrappage & retrofit program for a aged vehicles
  - Urban traffic management
    - Parking policies
    - Intelligent traffic lights
    - Enforcement of traffic regulation

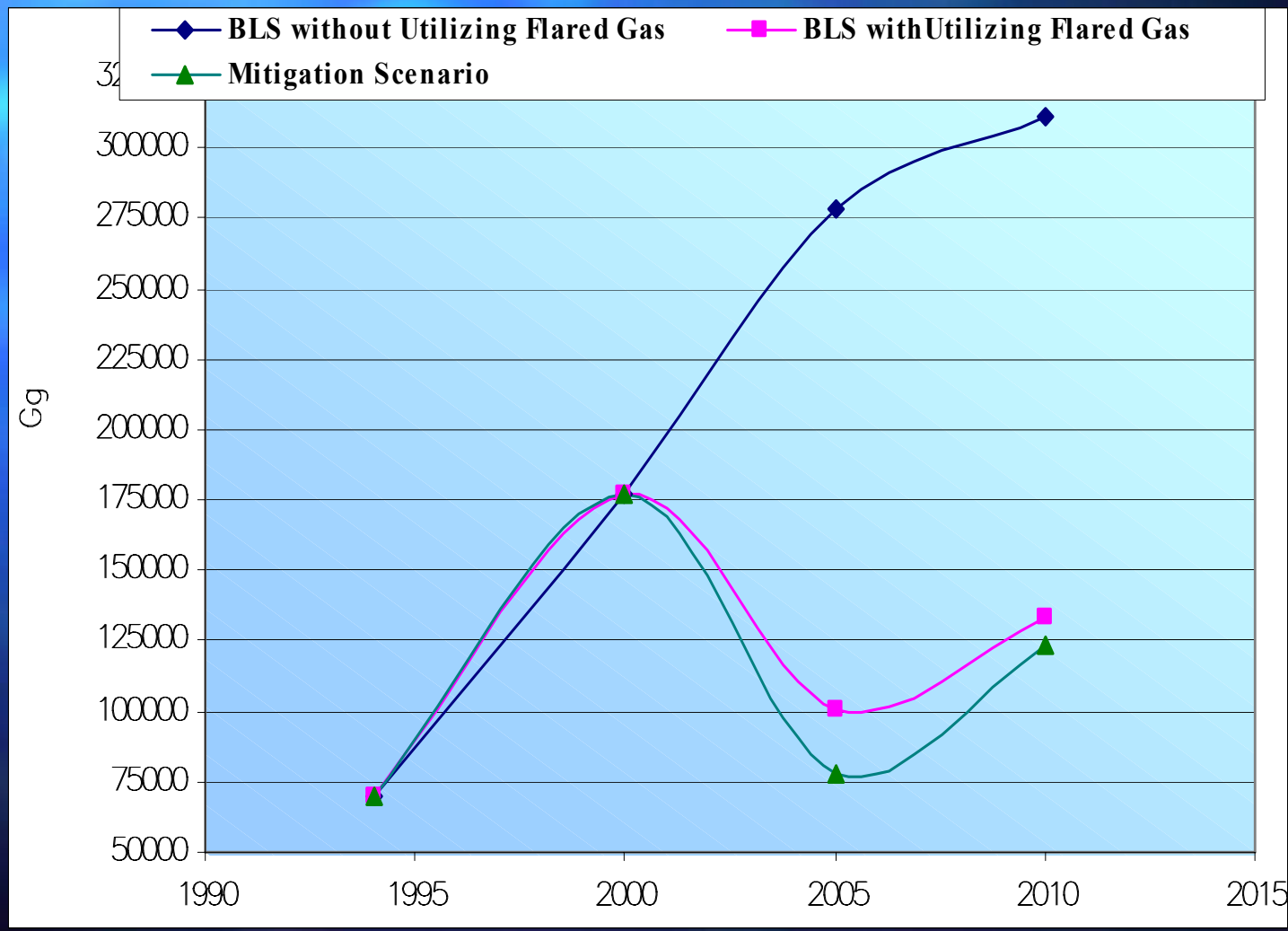
Policies and Measures for GHGs Abatement (continued)

- Commercial & residential buildings
  - Fuel switching
    - Expansion of rural electrification
    - Expansion of rural LPG uses
    - Expansion of urban natural gas uses
  - Energy efficiency
    - Efficient home appliance
    - Buildings insulation
    - Double layer windows
- Agriculture
  - Agricultural irrigation system by electricity network
  - Use of more efficient engines.

CO2 Emission Trends in Baseline Scenario for Oil & Gas Activities without Utilizing Flared Gas (Gg)



CO2 Emission Trends in Different Scenarios for Oil & Gas Activities



Comparison of the Amount of CO2 Emission for Different Measures in Power Plants

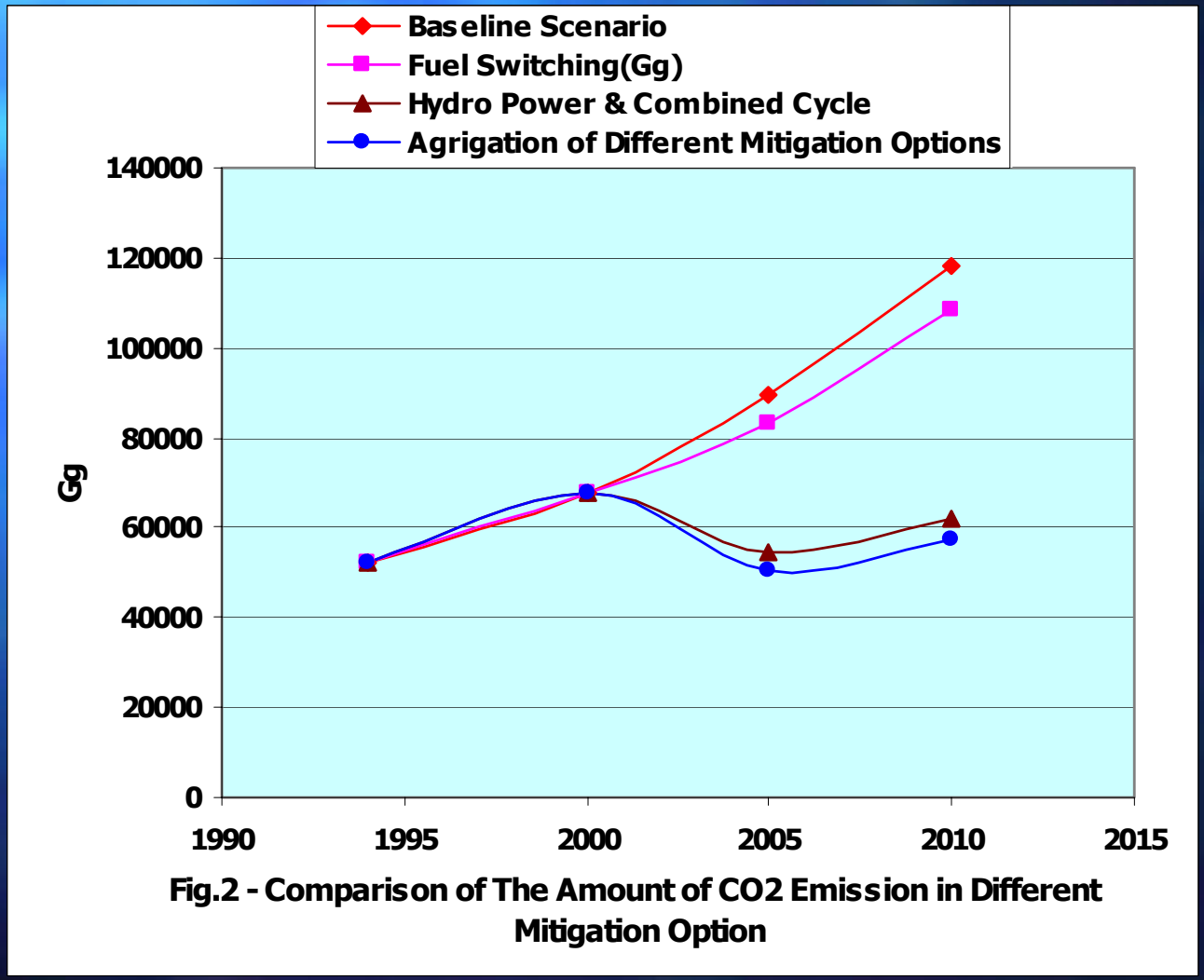
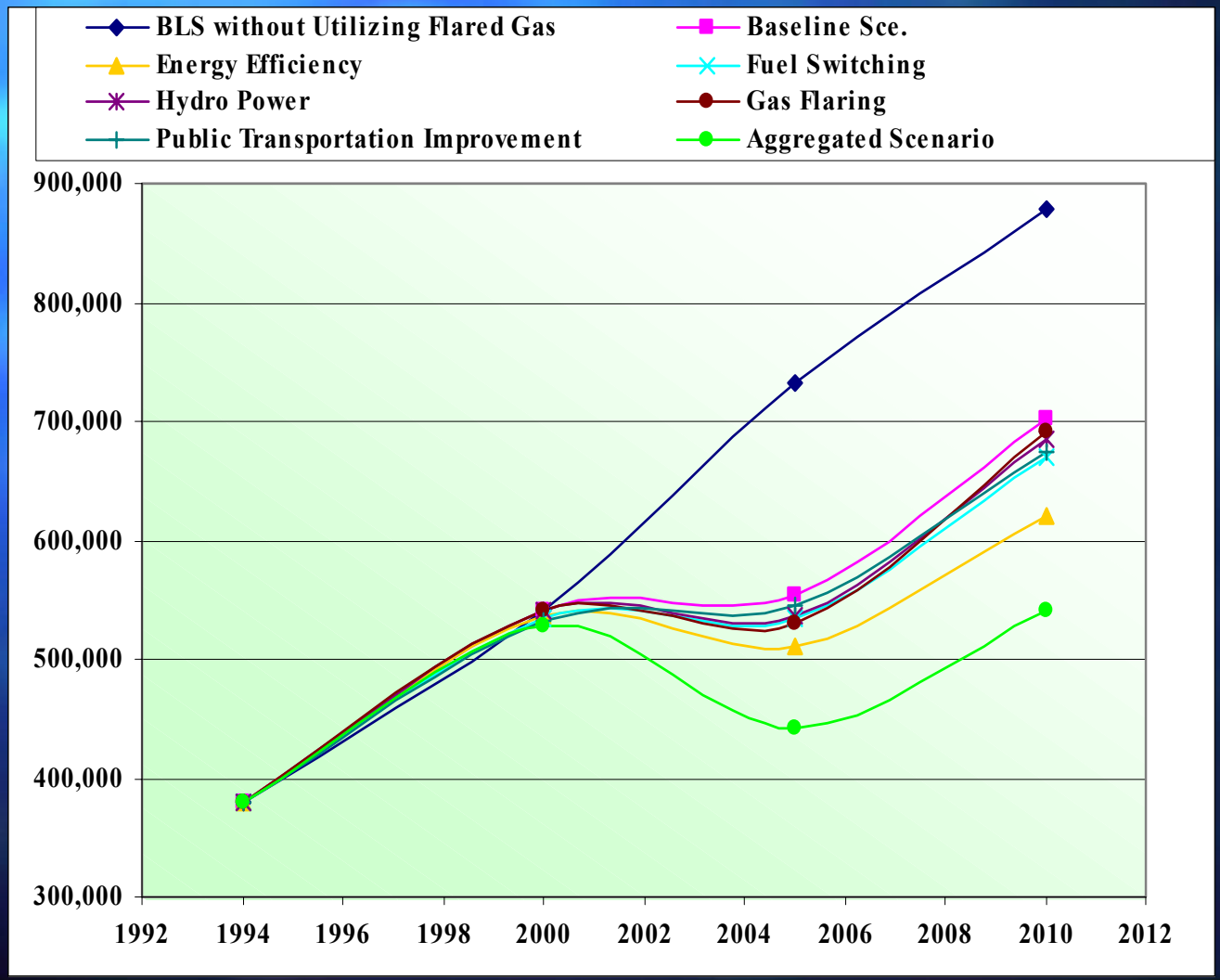
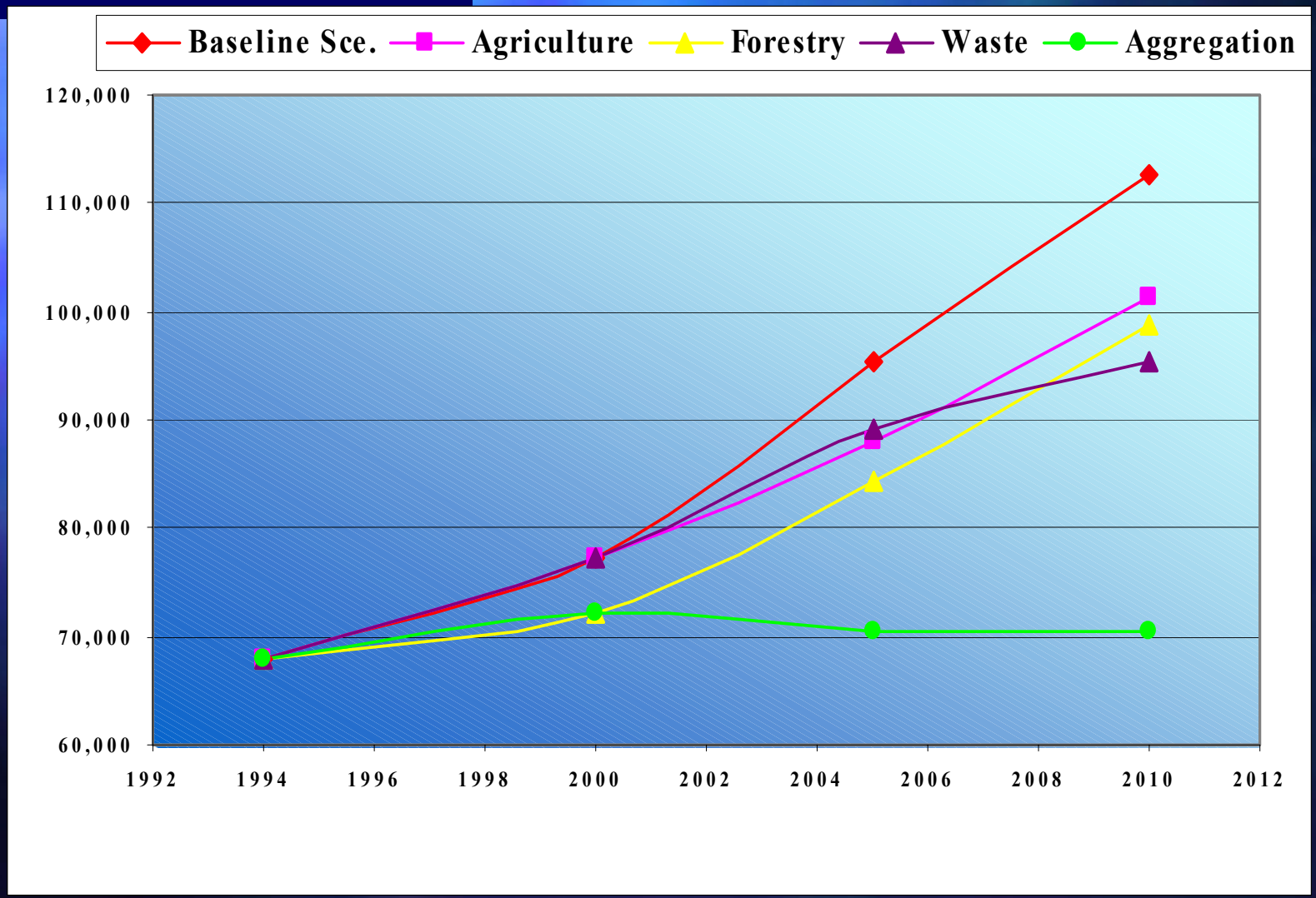


Fig.2 - Comparison of The Amount of CO2 Emission in Different Mitigation Option

GHGs Emission Trends in Different Scenarios for Energy Sector



Impact of Different Policies on GHGs Emission Reduction in Non-energy Sector



Problems and constraints for implementation of CDM

- Major industrial activities in Iran are state owned and of large scale, whereas the present level of CDM projects are of relatively small scale with little effect on GHG emissions.
- At present little experience exists in hosting CDM projects.