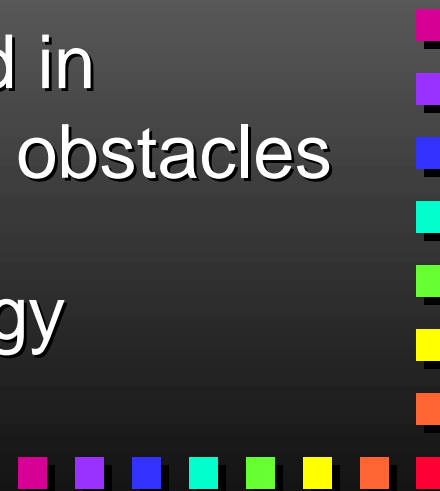




Elimination of lead in gasoline: economic and fiscal benefits

- 1- Role of those concerned and consequences
- 2- Economic and fiscal instruments
- 3- Plan for the elimination of lead in gasoline: legislative aspects and obstacles
- 4- Elements for a regional strategy





Elimination of lead in gasoline: role of those concerned

■ Auto builders

- Sell performance vehicules , high octane content, lead 0.15 _0.80 g/l

■ Refineries

- follow engine evolution, high octane , lead to minimize investments

■ Consumers

- Performance demands, high octane , leaded gas
- Protect environment, associations to prevent on de la pollution

■ Governments

- Aware of toxic effects, air quality improvement plan, national plans





Conséquences of lead elimination

- Major conséquences for refiners
 - Compensate lead elimination, investment in new unities, purchase oxygenated components (MTBE)
- Consequences for engine builders
 - lower octane, lower compression level
 - Catalytic converters, high cost
- Consequences for consumers
 - Higher priced automobiles
 - Increased gas consumption, higher cost per km
 - Consequences for governments
 - control procedures by realistic legislation
- Consequences on emissions and health
- Positive bottom line thanks to catalytic converters





Seeking a compromise

■ Contradictory interests

■ Engine builders

- seeking performance, high octane, catalytic converters
- Mandatory catalytic converters and costly tune ups

■ Refiners

- Minimize investment, low octane
- production of unleaded gas increases gas consumption and pollutant rejects

■ Solution of compromise

- European study: optimum **octane at 95 (RON) Eurosuper**
- If octane is higher: over consumption of oil, increase in refinery costs
- If octane is lower: higher consumption per km

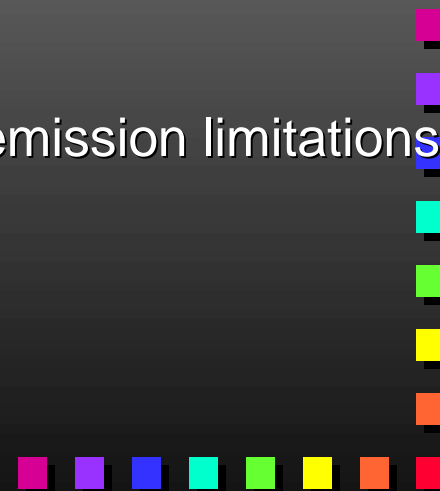




Economic and fiscal instruments

Role of regulations

- Overall objective : emissions reduction
- Solutions mainly depend on the **users behavior**
 - Renew old and polluting cars
 - Purchase high tech cars
 - Use clean and adapted fuel
 - Good engine maintenance
 - Limit travel
 - Limited role of regulations
 - regulations mainly applied to fuel specs and emission limitations
 - Cannot impact all the preceding factors





Fiscal and tax benefits

- Role of taxes:
 - Generate income for the State
 - And modify economic agents behavior

- Auto sales tax
 - guide buyers choice to other models
 - And keep cars longer

- Fuel tax: increase the cost per km
 - Encourage users to limit travel
 - And also to use more fuel efficient cars

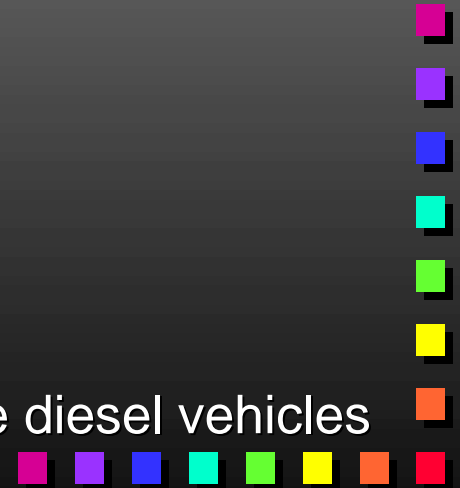
- **Lower taxes on unleaded gas**
 - Encourage penetration during transition period
 - Effectiveness seen in many countries





Fiscal benefits measures

- Fiscal benefits: instruments available to the State for eliminating lead and reducing pollution
- Lower taxes on unleaded gas
 - During the transition period
- Bonus for old car destruction
 - to accelerate vehicle renewal and eliminate polluting vehicles
- Public transport network
 - Partial reimbursement of antipollution system
 - And also use more fuel efficient cars
- Tax on diesel
 - Adjustement of diesel tax to limit use of private diesel vehicles (more difficult pollution control)





Plan to eliminate leaded gas

- Need for a national plan regrouping all those concerned and treating the overall problem of polluting emissions limitation
- National legislation on fuel specs
- Legislation on limiting vehicle emission
- National législation on air quality standards and measuring methods
- Implementation of a fiscal benefit program
Inspection and maintenance program, technical control





Obstacles to implementing the plan

- Local (or regional) refineries are not able to produce 100% of unleaded gas
- Refinery transformation investments need outside help
- The share of unleaded gas is small in the beginning of the procedure
- Most of the cars are old and do not have catalytic converters
- Gas stations are not equipped to sell different kinds of gas (transition period)
- People are hesitant to use unleaded gas





Elements for a regional strategy

- Improvement in fuel quality: lead, sulfur, aromatics, olefines.
- Technical measures concerning cars: mandatory catalytic converters, emission limitation standards
- Control and maintenance program
- Harmonisation of fiscal measures (Europe's example)
- Implementation of a technical study program like « Auto-oil-
- Establishment of an integrated ensemble of proposals at the regional level





Auto-oil type program

Oil industry
Refiners,
distributors

Regional
Commissions

European
Comission

(Auto-oil)

Auto industry

Identification of possible measures

- technical: engines, fuel
- control /car maintenance
- Non technical and fiscal measures

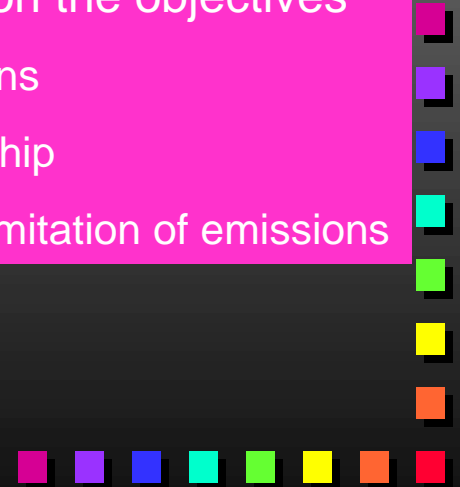
Air quality
objectives

Costs
/effectiveness of
measures

Impact of these measures on the objectives

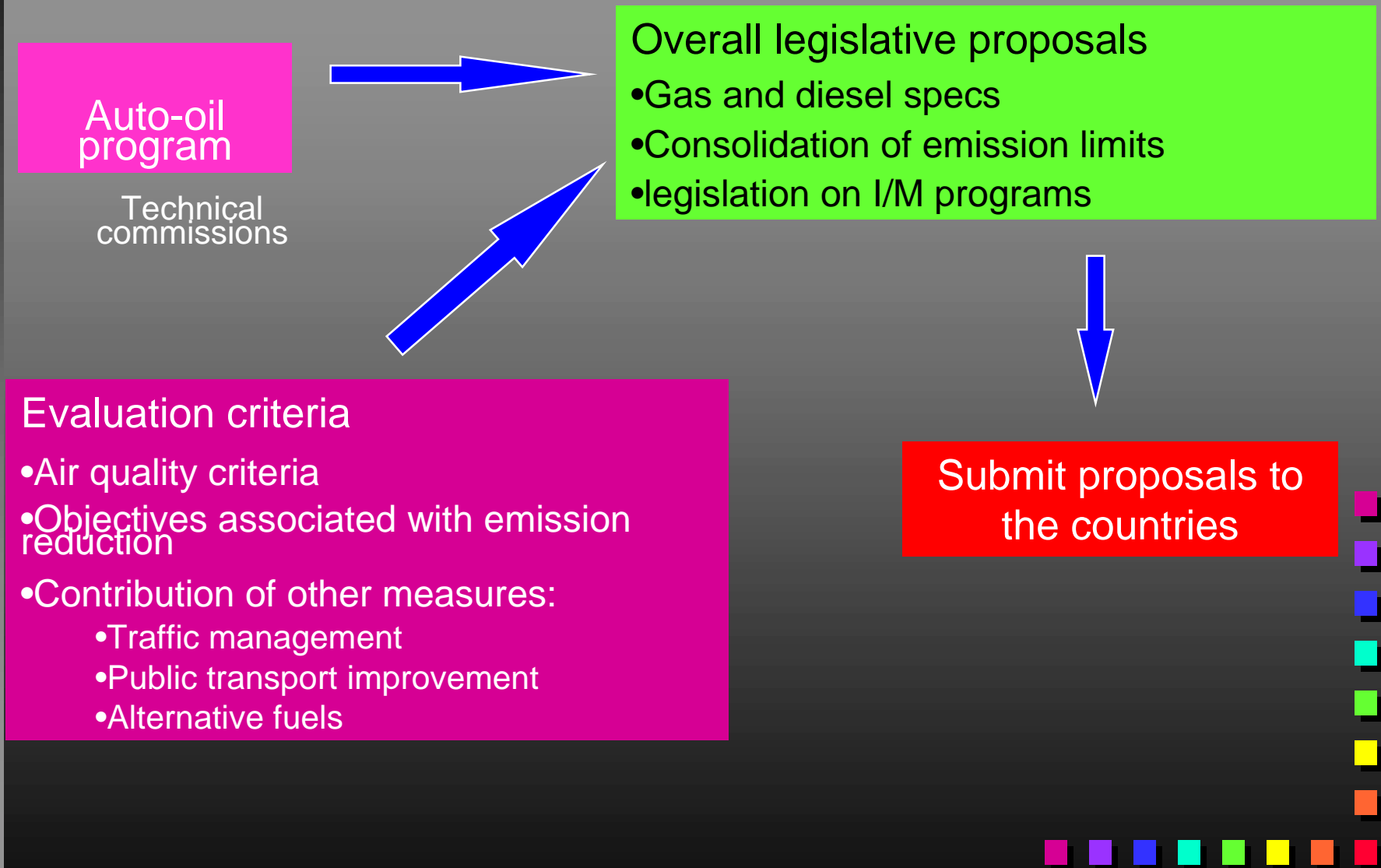
- Potential reduction of emissions
- Emissions/air quality relationship
- Final definition of objectives limitation of emissions

Identification of lowest cost measures to reach
these air quality objectives





Essential aspects of regional strategy



Auto-oil program

Technical commissions

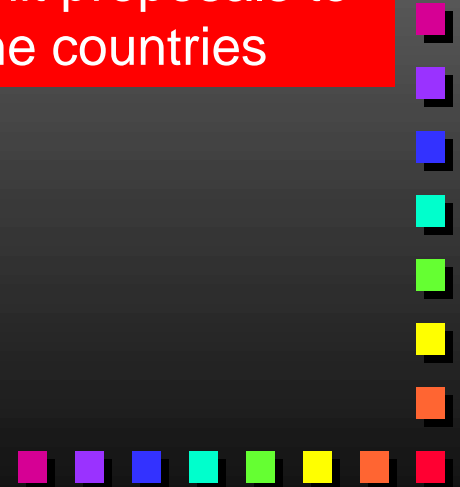
Overall legislative proposals

- Gas and diesel specs
- Consolidation of emission limits
- legislation on I/M programs

Evaluation criteria

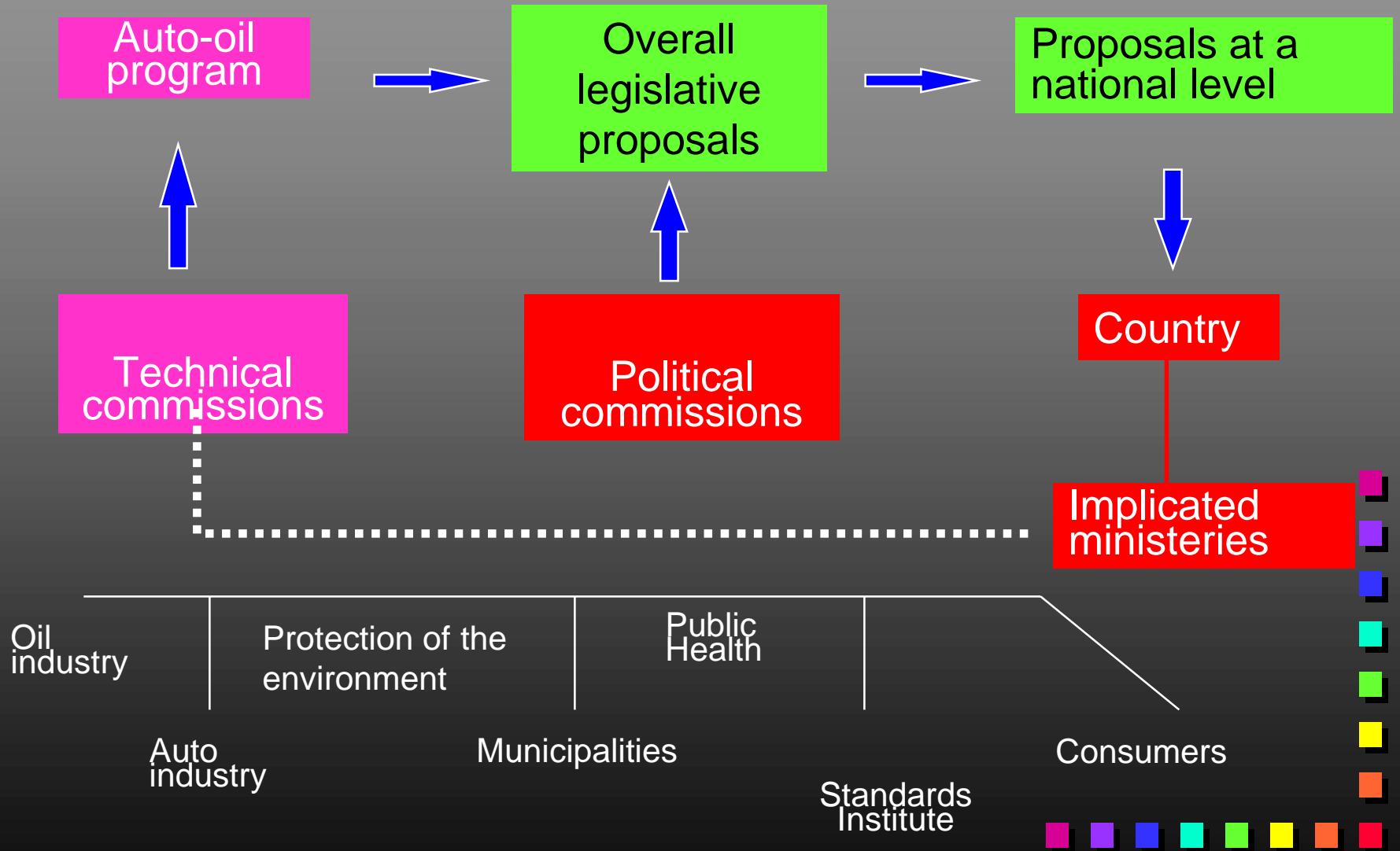
- Air quality criteria
- Objectives associated with emission reduction
- Contribution of other measures:
 - Traffic management
 - Public transport improvement
 - Alternative fuels

Submit proposals to the countries





Organization of regional strategy





Outside assistance

- Private programs in various sectors of urban ecology:
 - I/M Programs
 - Educational Programs
 - Maintenance Programs

- Technical and financial support from international institutions
 - BM, BAD, OMS /OPS
 - CENUA, PNUE

- Past and future studies:
 - refining, urban pollution ,specific aspects of certain countries,
.....





Inspection and Maintenance Programs (I/M)

40% of vehicle emissions (particles, CO, HC, Nox, indirectly O3)

- Reduces fuel consumption by 0 et 15%

■ I/M Systems

- Centralized system- control only

- advantage inconvenient
- Lowest cost ping pong effect

- Decentralized system- control and repairs

- advantage inconvenient
- more practical interfacing of functions
- no ping pong effect **corruption**

- fiscality- subvention (corruption control)

■ Costs: control: 6 -12 US\$ repairs: 140 US\$

■ Experimented in Latin America

Chile, Mexico, Costa Rica, El Salvador

