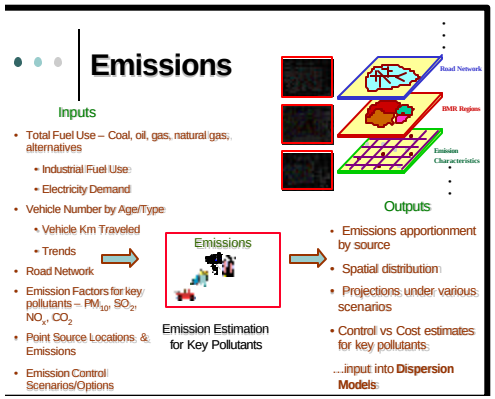
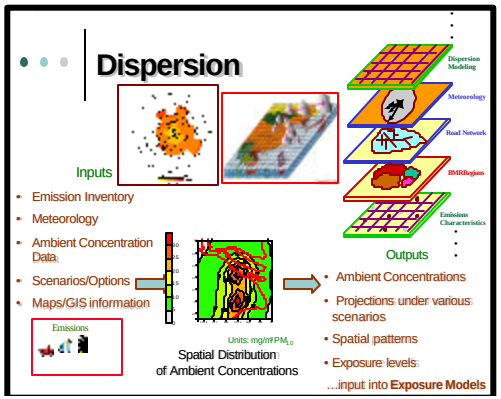
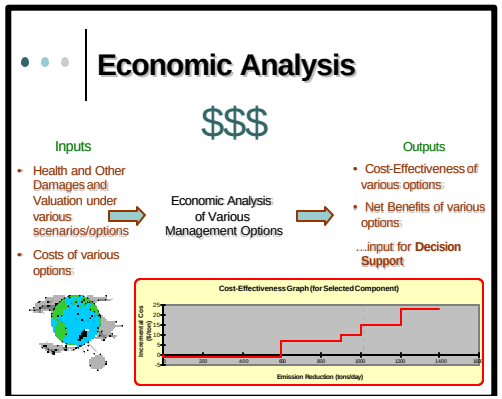
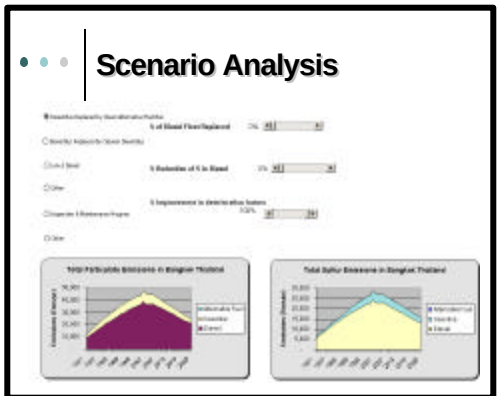
Developing Integrated Emission Strategies for Existing Land-transport (DIESEL)

Informed Decision-support for Evaluating Alternative Strategies (IDEAS)

Data Collection at Asian Institute of Technology, Bangkok, Thailand

Type	Data	Comments
General Data	➢ Available GIS data (e.g. in departments, universities, research institutions, private sector, etc.), especially GIS maps of BMA - provincial, landuse, topography, zones, roadmaps, population, vehicular density on key roads ➢ Climate - meteorological data (including windroses) ➢ Metadata on existing databases of relevance ➢ Criteria pollutants for Bangkok ➢ Identification of key stakeholders	➢ Uncertain access to and coverage/ quality of existing datasets
Policy and Institutions	➢ Review of relevant institutions (e.g. PCD, DLT, BMA, universities, research institutions, vehicle testing, NGOs, private sector, resource people) ➢ Review of existing policies/laws/ legislation on vehicles, fuels, industry, zoning, transport management ➢ Fuel, Emission, Ambient Standards ➢ Prices/Fees for registration, renewal, parking, etc.	➢ Contact Information ➢ Institutional facilities and capacity ➢ Willingness to participate in IDEAS development
Vehicles	➢ No. of vehicles by year by type (as disaggregated as possible by diesel, gasoline and alternative fuel vehicles) with a special focus on Diesel vehicles (trucks, buses, heavy-duty vehicles, vans, etc.) and their alternatives ➢ Emission factors (g/km) and average vehicle km traveled per day by type ➢ Emission factor deterioration characteristics ➢ Fuel efficiency ➢ Occupancy	➢ New registration and in-use vehicle information ➢ Transport surveys ➢ Resolution of data gaps/ uncertainty/ ambiguity ➢ Need to enhance understanding of non-motorized vehicles ➢ Need to brainstorm on future vehicle options ➢ Link with transport models of future scenarios and laboratory studies
Fuels	➢ Fuel consumption statistics and trends by sector and type of fuel (e.g. diesel, gasoline, coal, oil, gas, etc.) ➢ Fuel - imports, exports and use by type and quality ➢ Chemical characteristics of various fuels (focus on sulfur and carbon load in diesel and alternative fuels) ➢ Price characteristics of key fuels/alternatives	➢ Existing data for Bangkok is poor ➢ Laboratory studies should help with some of these data ➢ Poor understanding of impacts of lube/ fuel-additives/ oxidation catalysts
Traffic Systems Management	➢ Inspection and Maintenance requirements/capacity/ impacts ➢ Origin-destination survey results ➢ Driving Cycles; Peak hours and traffic densities ➢ Transport models of future modal split by major roads/areas and for proposed major projects ➢ Impact of driver training programs ➢ Multi-modal transport networking and ridership and planned expansions (w. expected schedule)	➢ Establish and maintain knowledge base

Type	Data	Comments
Overall Emissions Inventory (PM10, PM, SO_x, NO_x, CO, VOC, CO_2/GHG)	➢ Emission factors from various sources (incl. vehicles) using various fuels and for local conditions ➢ Location, type and emissions from large point sources (based on emission factors as necessary) - incl. information on stack heights where available ➢ Location and emissions from area sources (by suitable grid) ➢ Estimates of emissions from nontraditional sources (e.g. vendors, garbage burning, etc.) ➢ Resuspension estimates ➢ Deterioration factors (e.g. for in-use vehicles) ➢ Cooking practices in various areas	➢ Developing a shared database for emissions inventory estimation
Ambient Monitoring	➢ Monitoring locations, equipment, analysis techniques ➢ Monitoring data – historical	➢ Develop shared database on ambient quality
Exposure Assessment /Health Impacts/ Valuation	➢ Literature survey of relevant past and current studies ➢ Health impacts (dose-response functions for Bangkok, hospital health statistics relating to air pollution) ➢ Valuation estimates (e.g. mortality, morbidity, DALY, value of statistical life, willingness to pay/accept studies)	➢ Details of HEI/PAPA and other studies ➢ Developing a shared understanding of the links among ambient concentrations, exposure, health impacts and valuation
Identification/ characteristics of technical and policy options	➢ List of possible diesel emissions management options for Bangkok and estimates of effectiveness and costs (e.g. control costs by industry type, etc.) ➢ Street cleaning/washing schedules by street ➢ Experience with various pilots ➢ Analysis of Options	➢ Information on options and their characteristics/impacts is especially poor and needs to be strengthened with the collaboration of steering committee agencies