



# Energy Efficiency-Transportation:

## Module 4: *Transport and mobility*

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## Module 4: Transport and mobility

### Baseline

- **Air Quality Act 2004**



### Ongoing work

- **INTEGRATED TRANSPORT PLAN (ITP)**
- **AIR QUALITY MANAGEMENT PLAN (AQMP)**

each for the city of

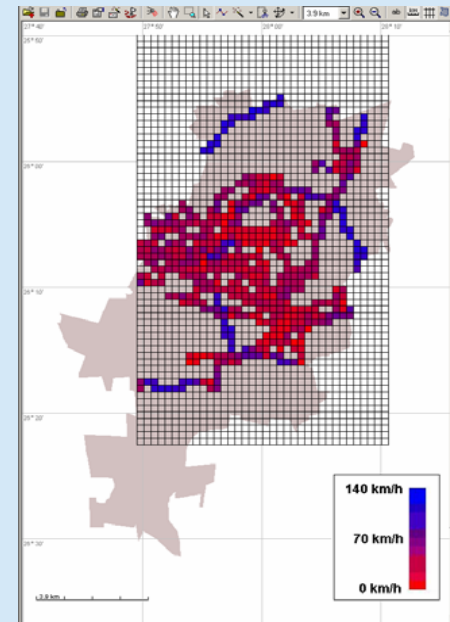
**Johannesburg  
Ekurhuleni  
Tshwane**

**(JET)**

- Investigating: *real-world driving results*
- Validating *fuel consumption models*

### Long term target:

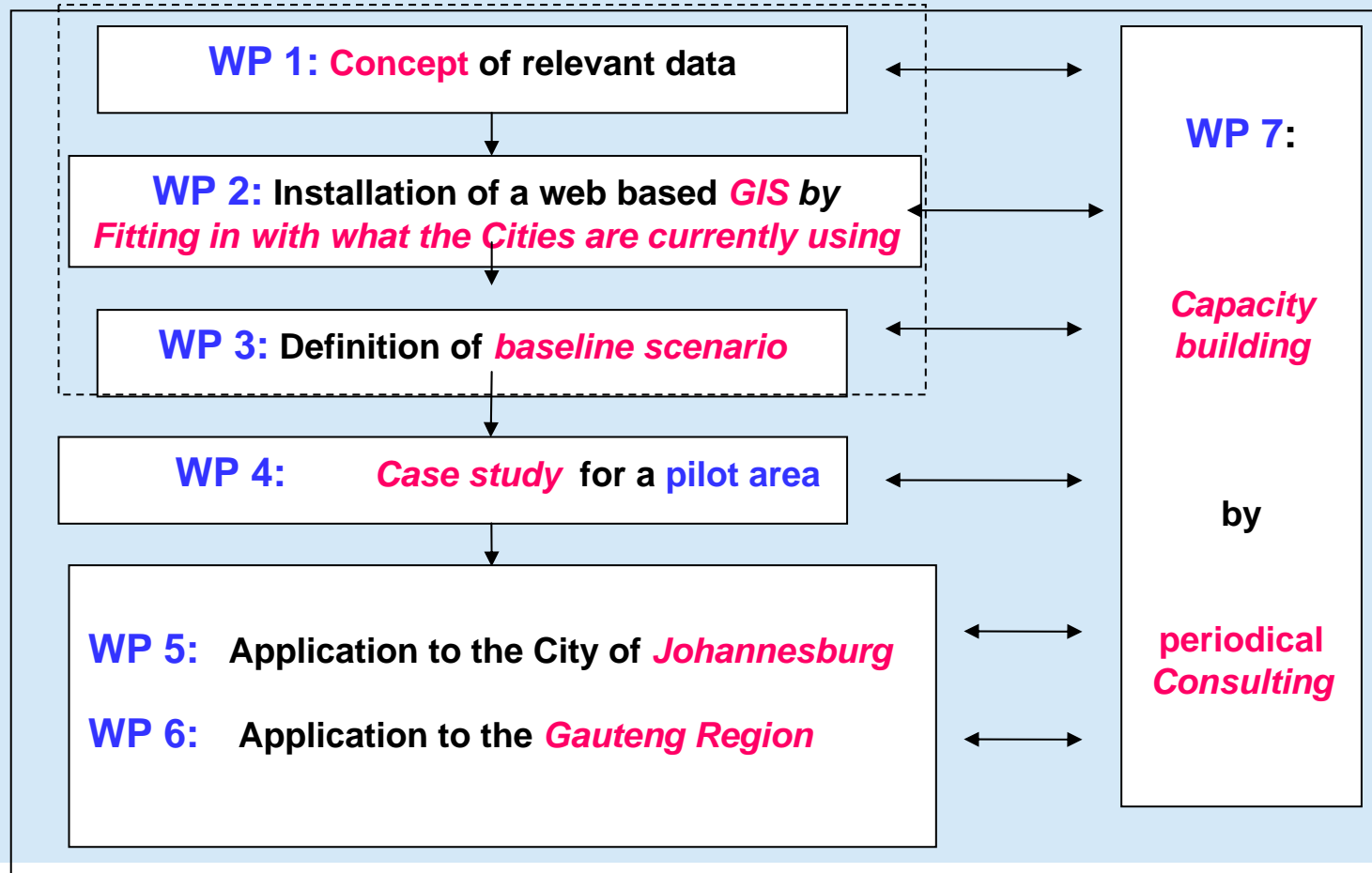
- **Emissions Inventory**
- **Mobile Sources:**  
Input for
- **Scenario calculations**
- **Dispersion Modelling**





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### *Work Packages* to reach the target





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### Clustered Emission Factors

for various reference years as function of:

- age distribution of vehicles
  - maintenance level
  - speed/acceleration
  - vehicle load
  - ambient temperature
  - road gradient
- etc.



**Exhaust Emissions Mobile Sources**

### Mobile Sources

The working steps to establish a detailed traffic emission inventory are summarized below:

1. Contact with the responsible offices.
2. Classification of emission sources in line- and area sources
3. Definition of the type of the source:

line-sources dependent on

- characteristic of the road
- number of traces
- paved or unpaved roads
- speed limits

area sources dependent on

- dwelling characteristics
  - population and building density
  - distance from the city
- etc.

4. Digitizing the characteristics of the area and the line- and area sources.
5. Investigations about the traffic flows and the vehicle speeds
6. Complementary traffic investigations.
7. Iterative calculation of typical diurnal traffic flows.

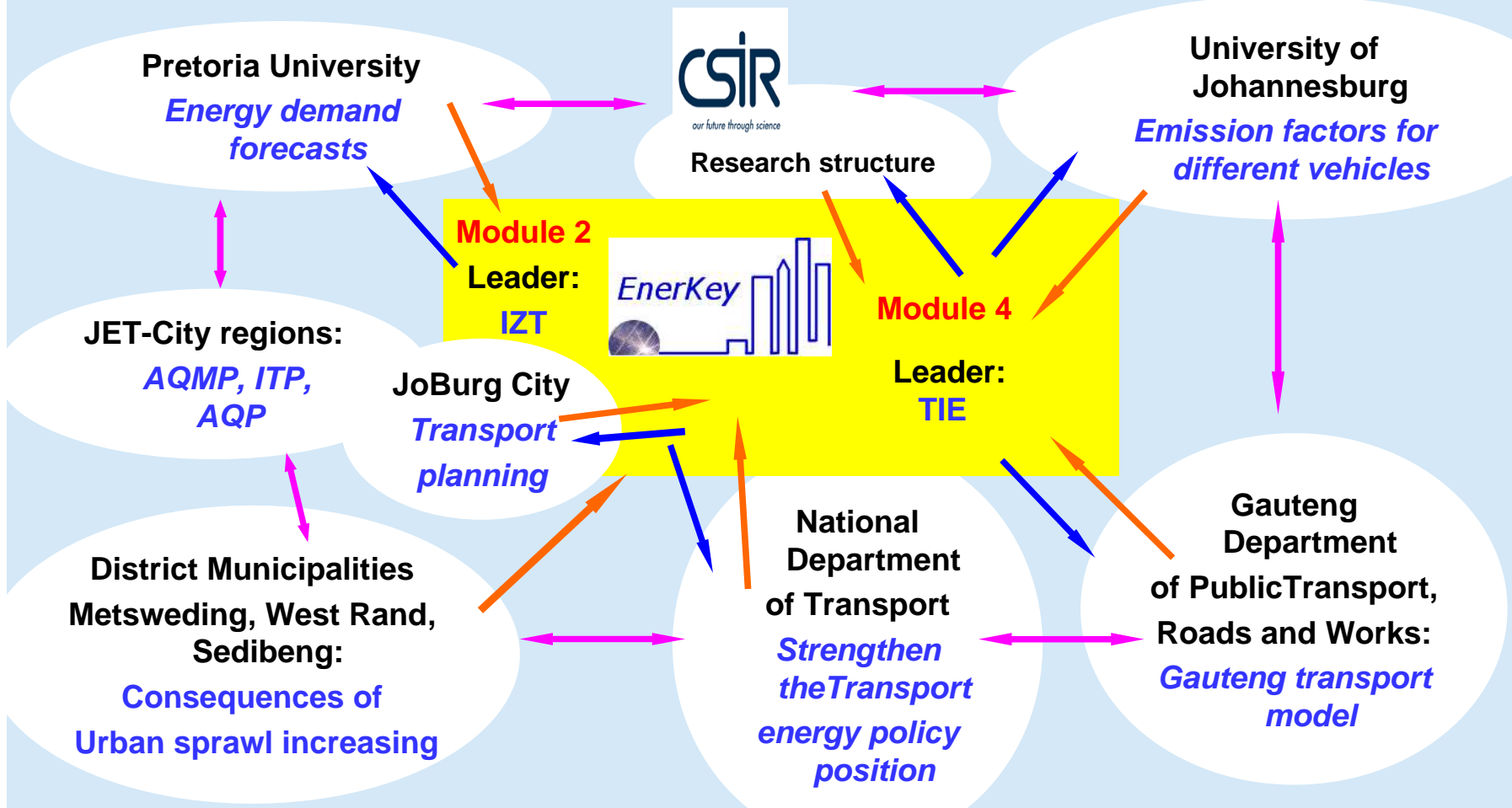
**Clustered Traffic data**





# Module 4: Transport and mobility

## Decentralized Information Exchange Platform





## Module 4: Transport and mobility

### Centralized Information Exchange Platform



Supposed  
Leaders  
SA-partners

JoBurg City  
Transport  
planning



### Module 4

Leader:  
TÜV Rheinland  
(TIE)

#### Services<sup>1</sup>:

- Availability of multidisciplinary **research** and **transport modelling infrastructure**
  - National and **international networks** in various disciplines
  - Good **relationships** with **external stakeholders** in the private and public sectors
  - Readily available **infrastructure** to **host meetings**
- Last not least:**
- Ability to provide limited **co-funding**

#### Objectives:

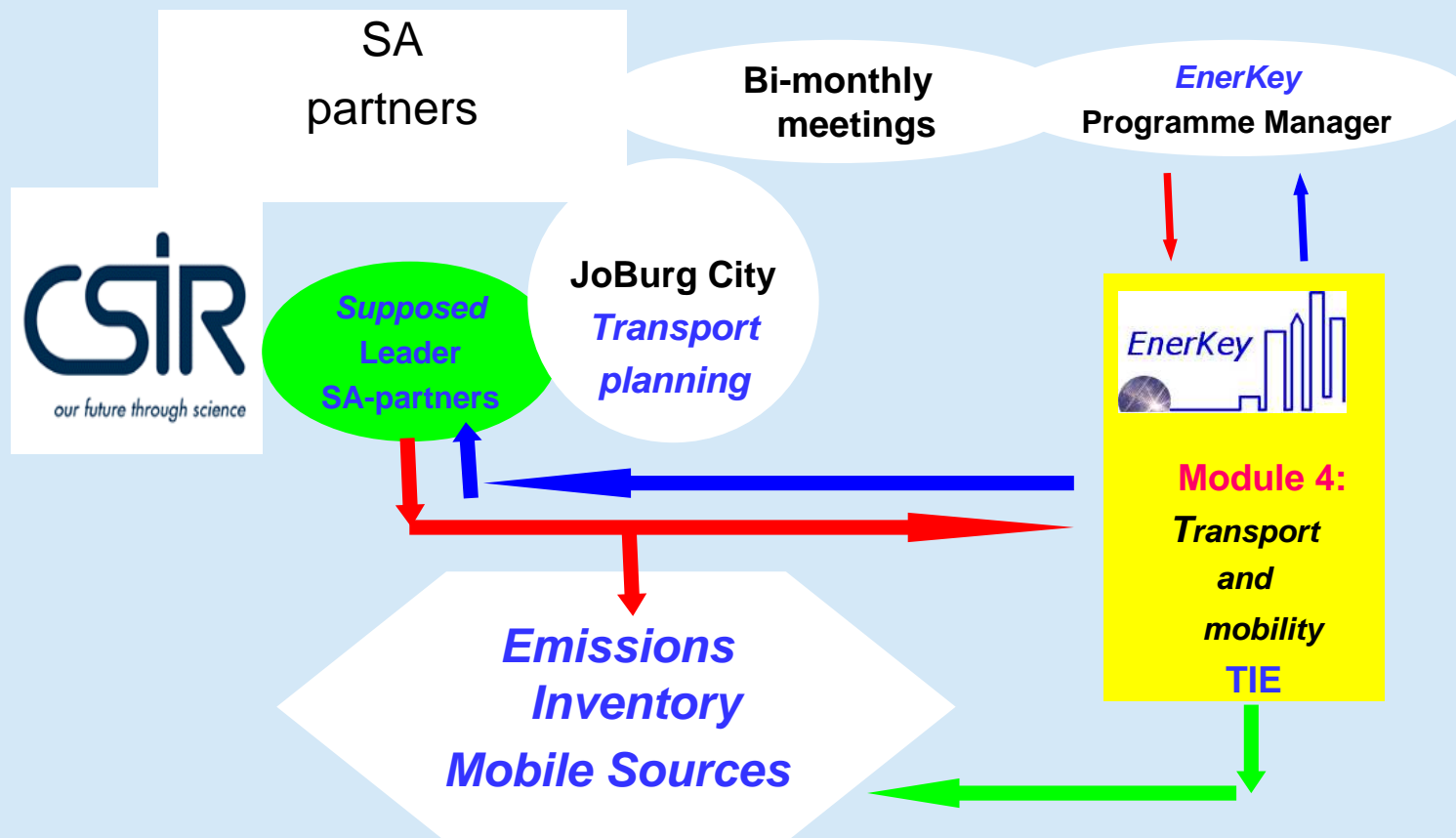
- **Networking** in the **AQMP** for **climate protection** by guarantee **sustainable mobility**
- **Fitting the existing GIS** for analysing the influence of **traffic regulations** and **Modal Split** (e.g. **GAUTRAIN**, **Rapid Transport Systems**) on energy and the environment (and **vice versa**)
- **Rational use** of energy, energy efficiency and energy saving measures
- Use of **renewable energy** resources like **biomass**
- Influence on the environment from **emission control measurements** like **Inspection and Maintenance (IM)**

<sup>1</sup>: Source: mail M. Mokonyama, 03 April 2008



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### Centralized Information Exchange Platform





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### Targets:

- Reducing critical datasets backlog
- Development of decision support tools
- Practical implementation strategies

### Therefore:

- Each member of the working group will define deliverables that are in line with their organisational goals

### These will generally be packed in to include:

- Influencing of the direction of parallel projects/programmes in the private and public sector



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### Possible *Pilot Area* for the Emissions Inventory Mobile Sources

