



UNITED NATIONS

Economic and Social Commission for Western Asia (ESCWA)

ForFITS Regional Workshop on Raising Awareness

Estimating transport energy uses: results from a micro-survey applied to Tunisia



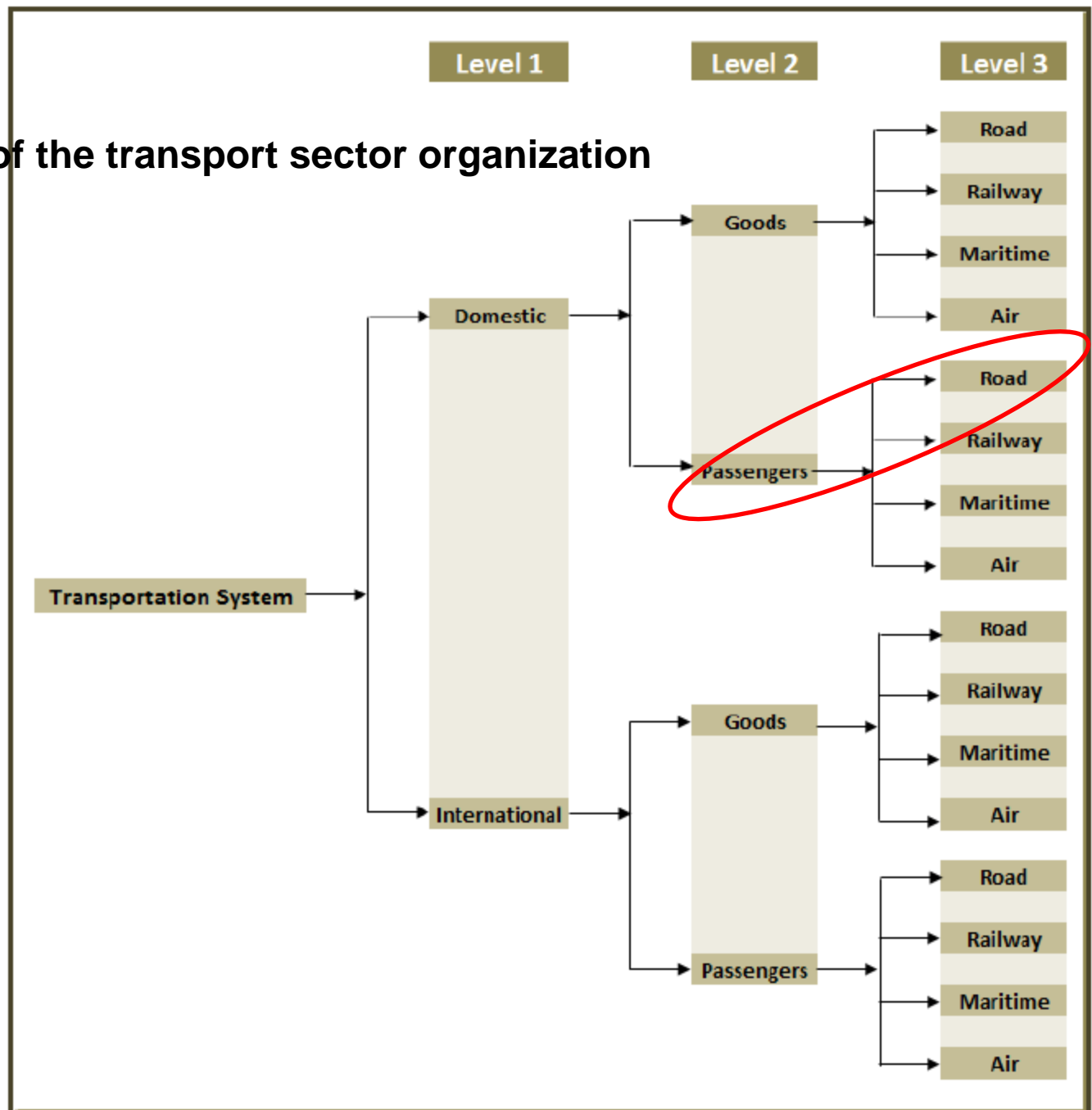
Hammamet, Tunisia, 2-3 December 2013

Context

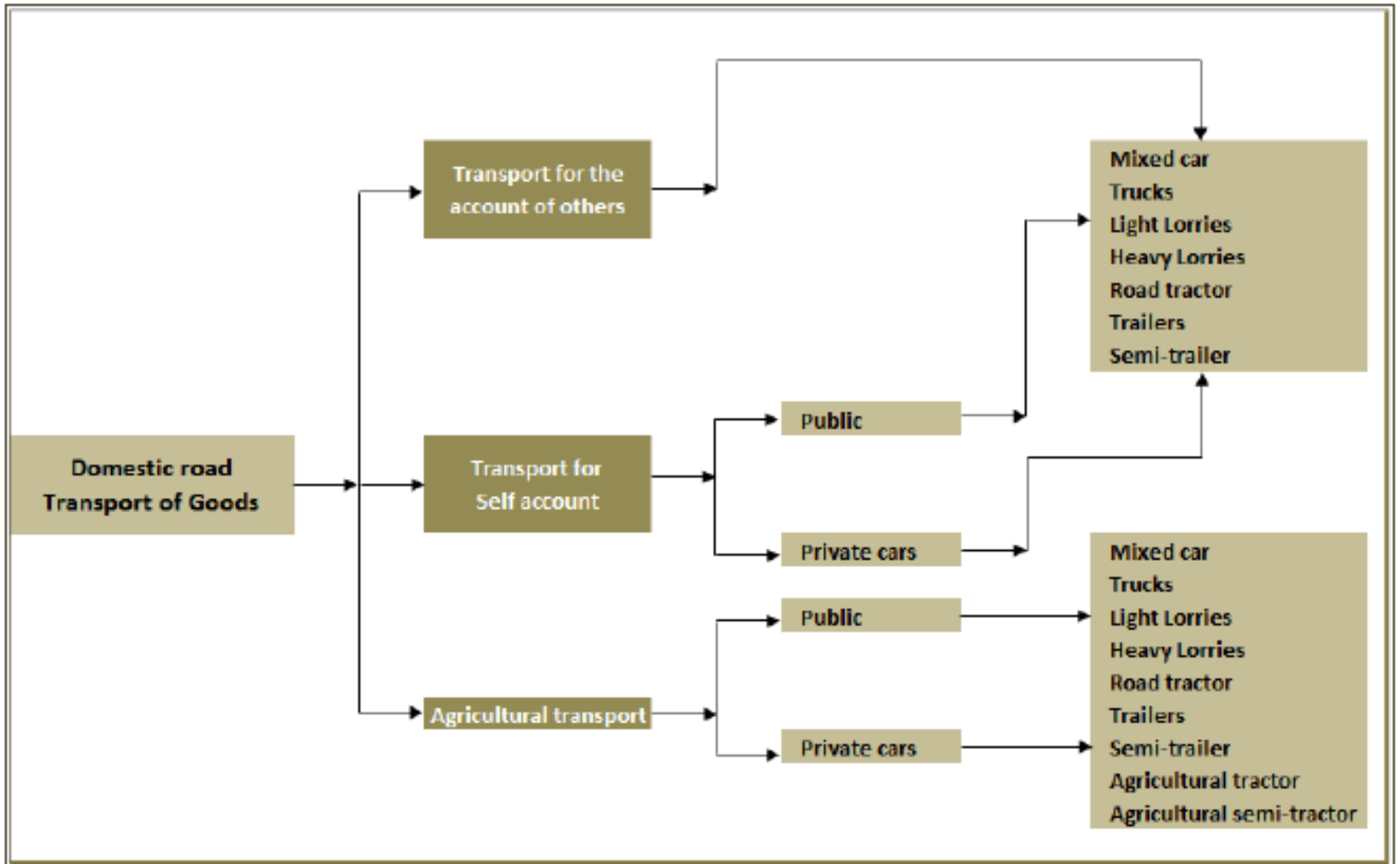
- **Work done within the framework of the « Development Account Project on Energy Statistics and Balance in the ESCWA Region».**
 - Manual developed by the ESCWA « training manual on methodologies for data collection on energy use by the transport sector and case studies from the Arab region”
 - Case studies of Tunisia, Palestine, Morocco and Canada

- **Focus**
 - Tunisia case study
 - Private passenger transport

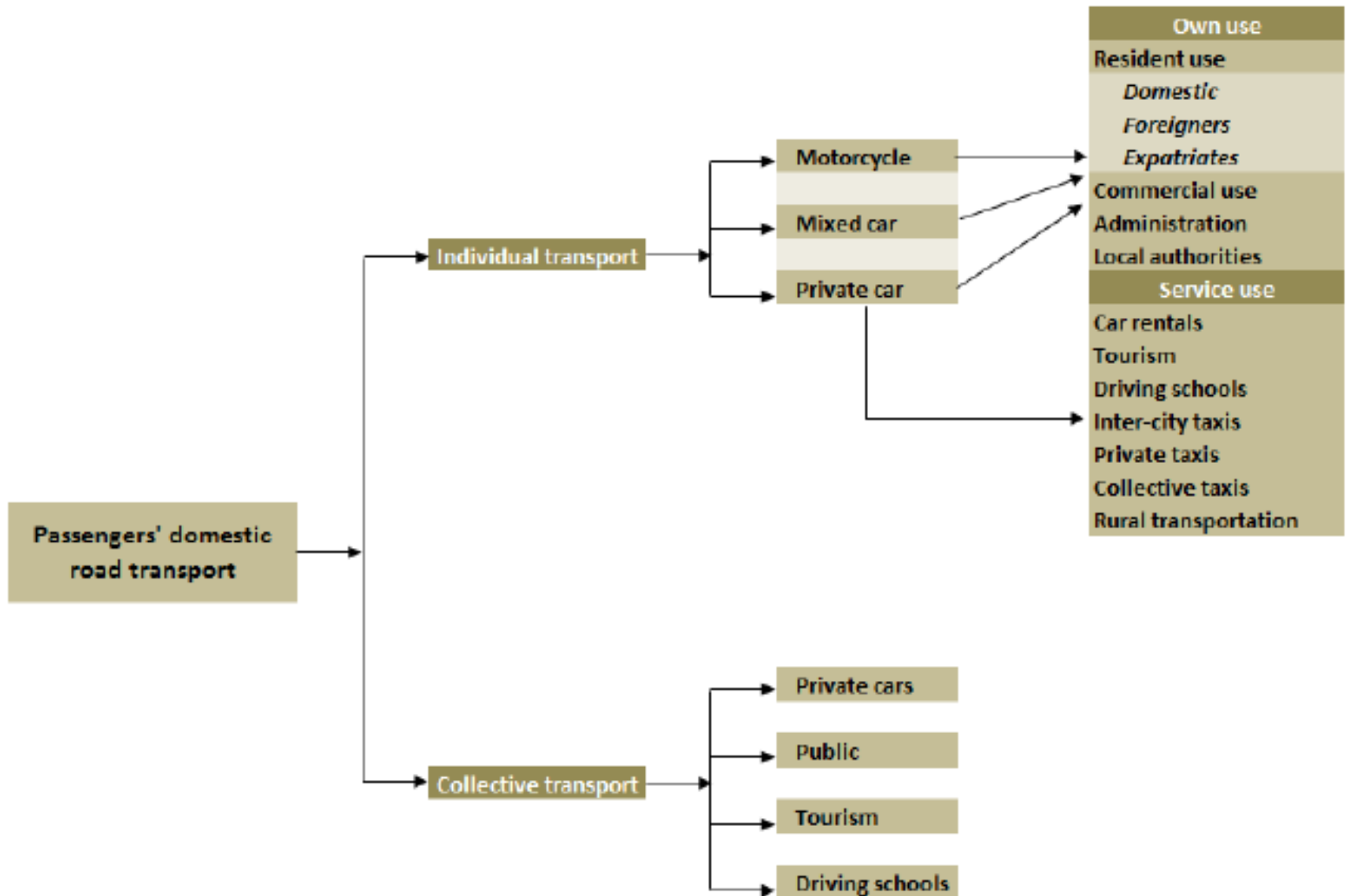
Complexity of the transport sector organization



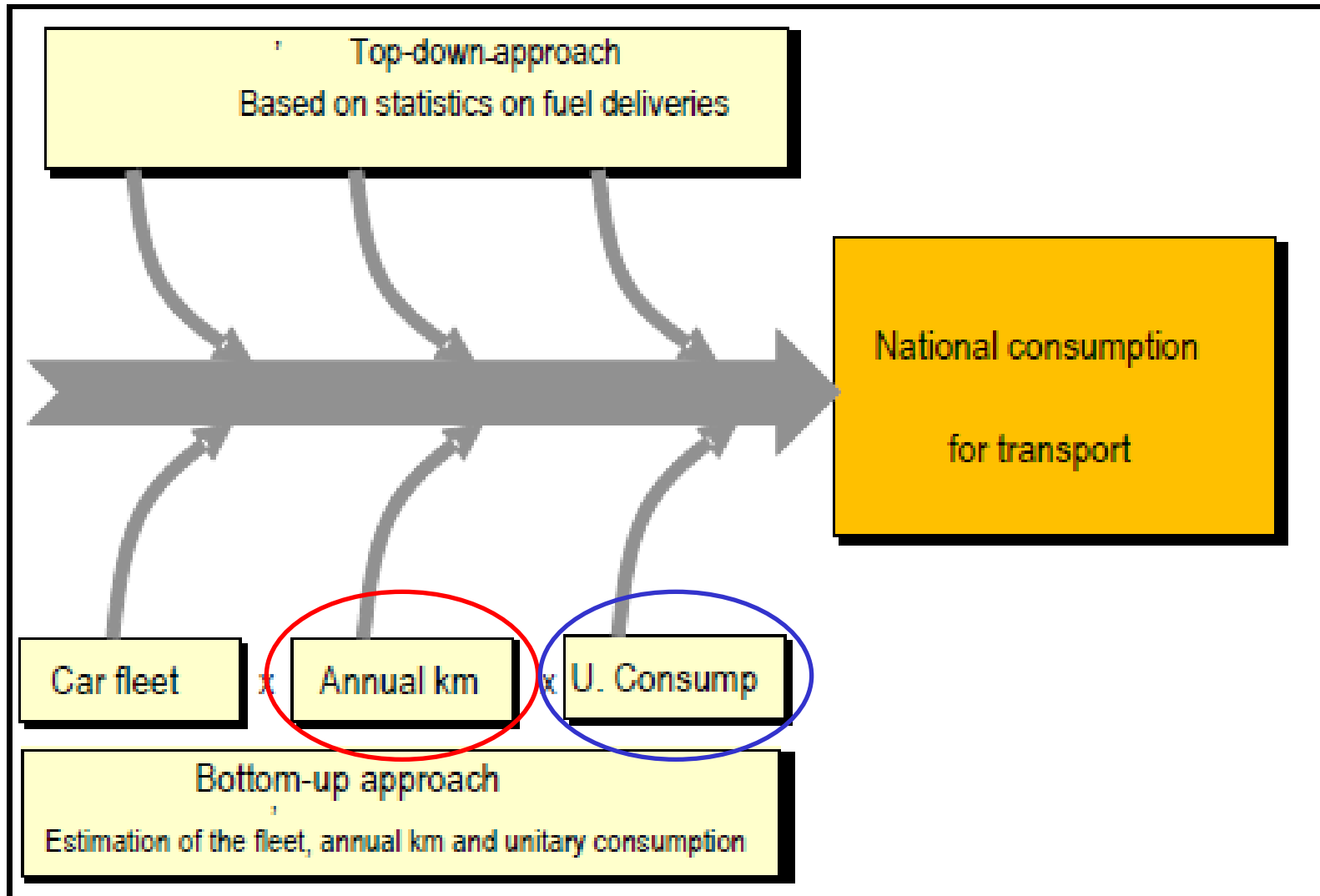
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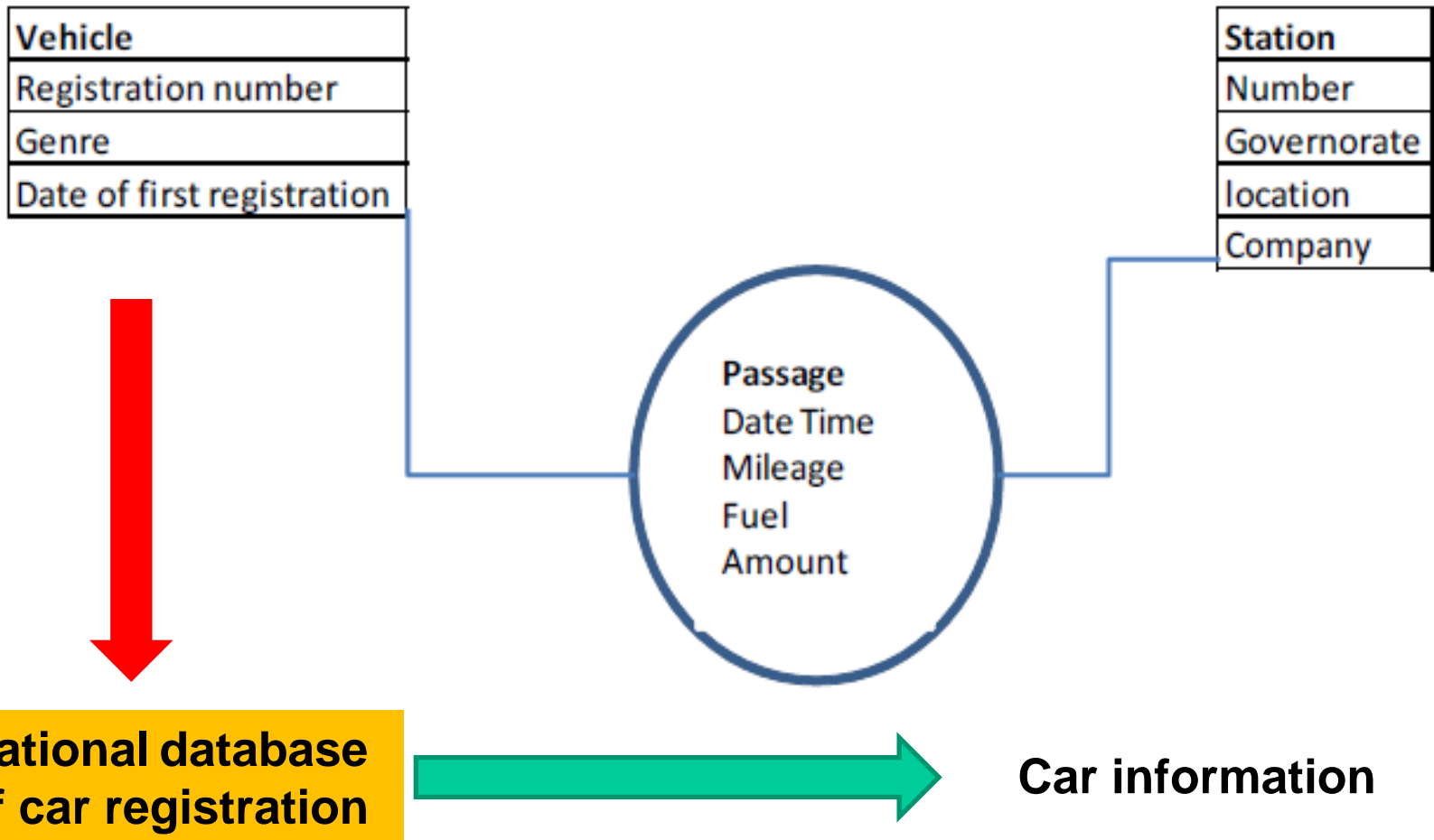
Surveys to service stations: objective



Surveys to service stations: target information

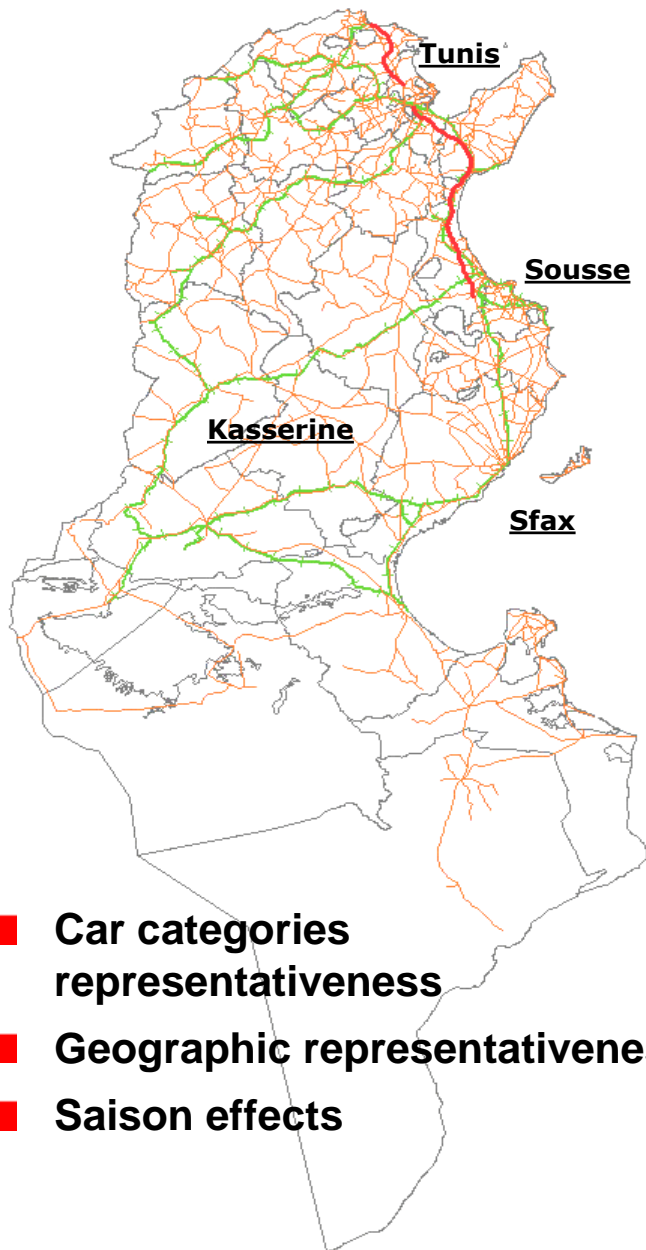
- **Distribution of fuel sales service stations by vehicle category and type of use**
 - By fuel : Gasoline, Diesel, LPG
 - By category and age and
- **Annual kilometers by type of road vehicle**
 - By fuel : Gasoline, Diesel, LPG
 - By category, power, age
- **Fleet Structure**
 - By type of fuel: Gasoline, Diesel, LPG for each category of vehicles
 - By Power level and category





Surveys to service stations: Collected data





Surveys to service stations: sampling

Tunis




| Station | | Période | |
|---|------------|------------------------------------|-------------|
|  | Mohammed V | Avril - mai 2006 | X |
|  | Sokra | Juillet - Août 2006 | X |
|  | Ennar | Septembre - octobre 2006 | X |
|  | Charguia | Nombre total de véhicules enquêtés | 5500 |

Sousse - Sfax

| Station | | Période | |
|---|---------------------------|------------------------------------|-------------|
|  | Oued El Kharroub (Khzama) | Avril - mai 2006 | X |
|  | Oued El Kharroub (Khzama) | Juillet - Août 2006 | X |
|  | Teniour (Sfax) | Septembre - octobre 2006 | |
| | Sagaz | Nombre total de véhicules enquêtés | 3250 |

Kasserine

| Station | | Période | |
|---|-----------------------------------|------------------------------------|-------------|
|  | (En discussion avec la compagnie) | Avril - mai 2006 | |
| | | Juillet - Août 2006 | |
| | | Septembre - octobre 2006 | X |
| | | Nombre total de véhicules enquêtés | 1250 |

- Car categories representativeness
- Geographic representativeness
- Saison effects

Sampling drivers

■ Car categories representativeness

- Representativeness of the stations surveyed: volume and structure of fuel, types of traffic, geography
- Representativeness of users of the surveyed stations: volume and structure of fuels, volume and structure of fleet

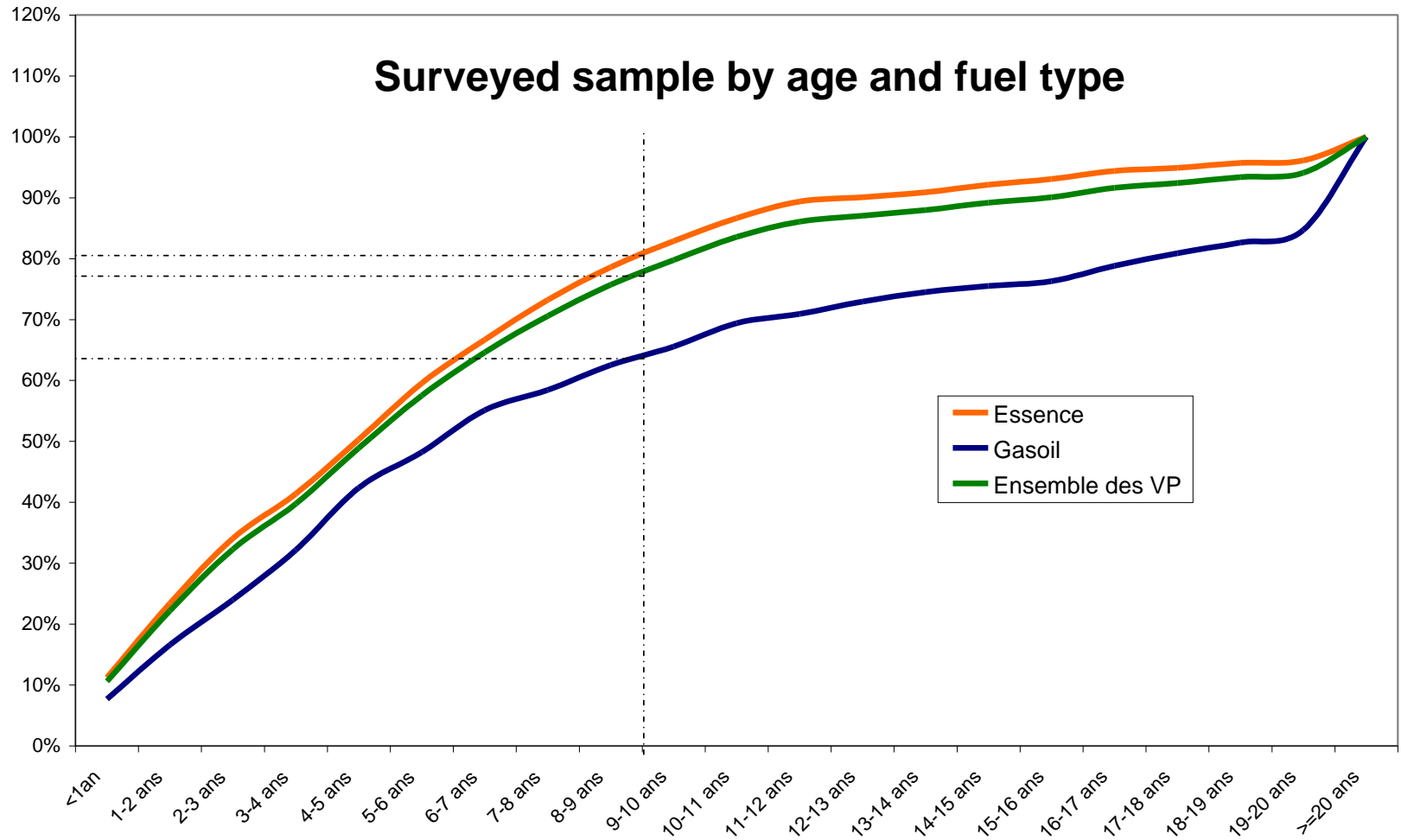
■ Sources of bias to recover

- Multi-passes
- Seasonality: 4 companions surveys
- Over-representation of large rollers

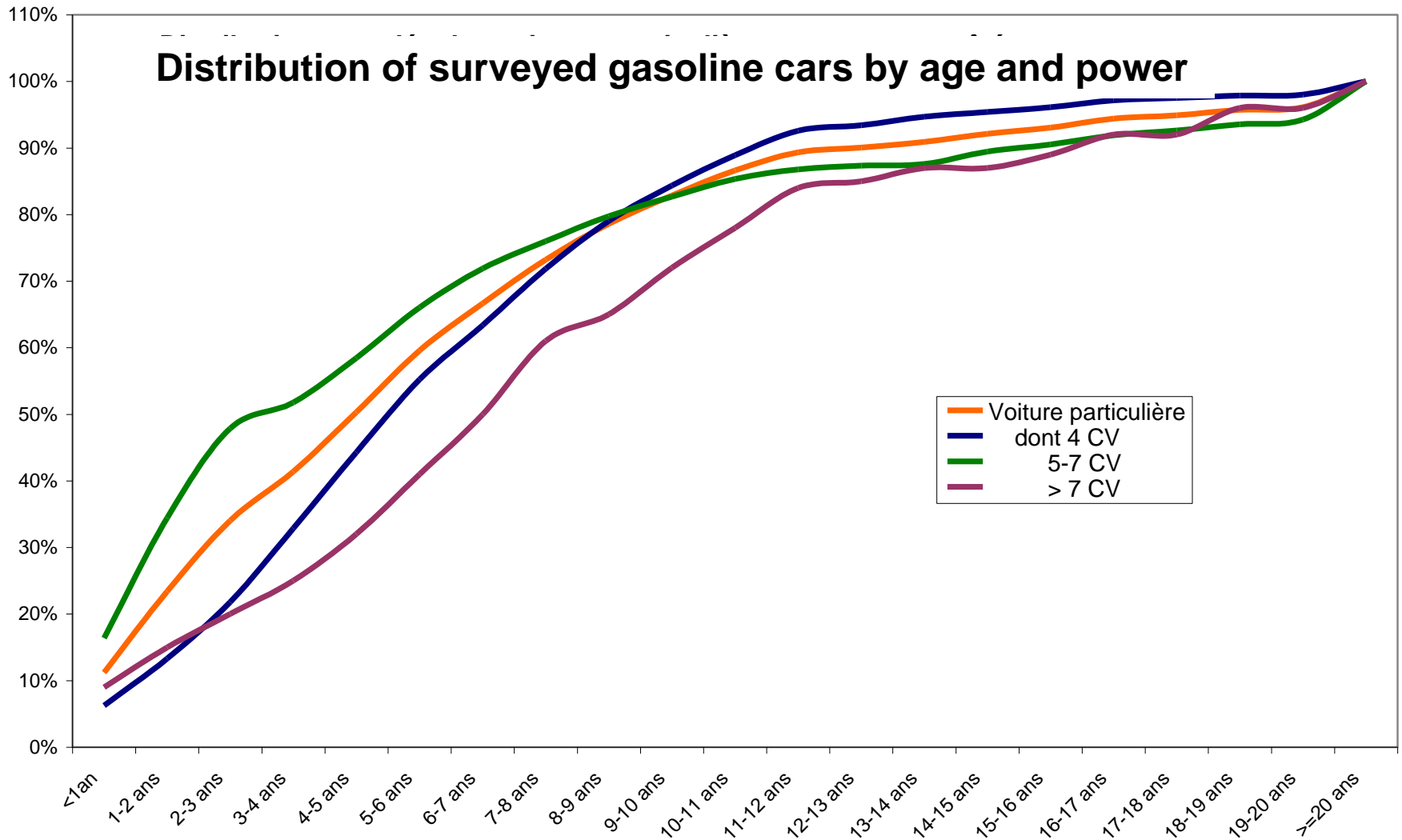
■ Adjusting methods

- Structure of fuel sales by vehicle type: taking into account the seasonality
- Average annual kilometers: taking into account seasonality, eliminating multi-passes, weighting of respondents by age based on national registrations parks (adjust great rollers)
- Fleet structure : taking into account seasonality, eliminating multi-passes

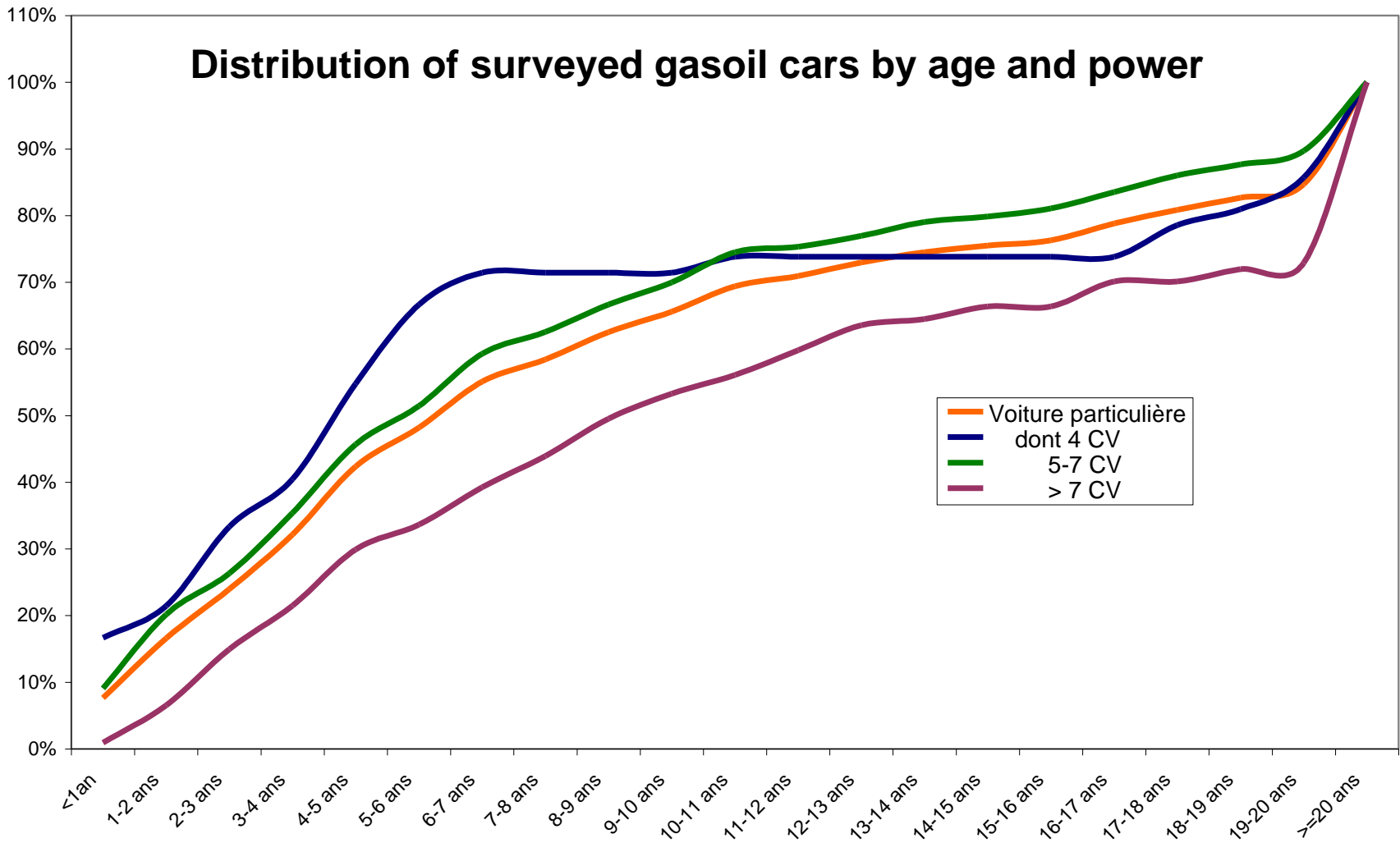
Surveyed fleet structure



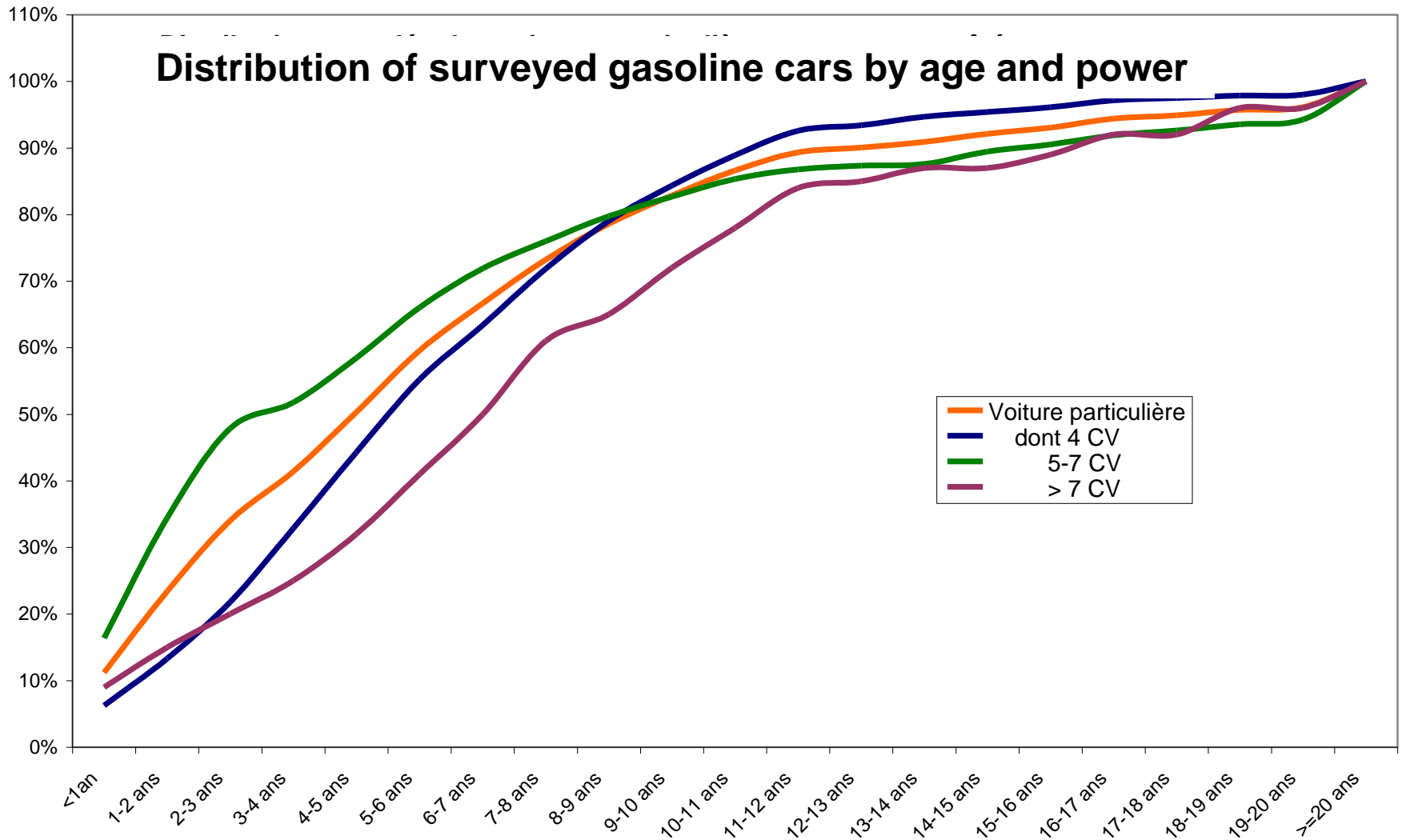
Surveyed fleet structure



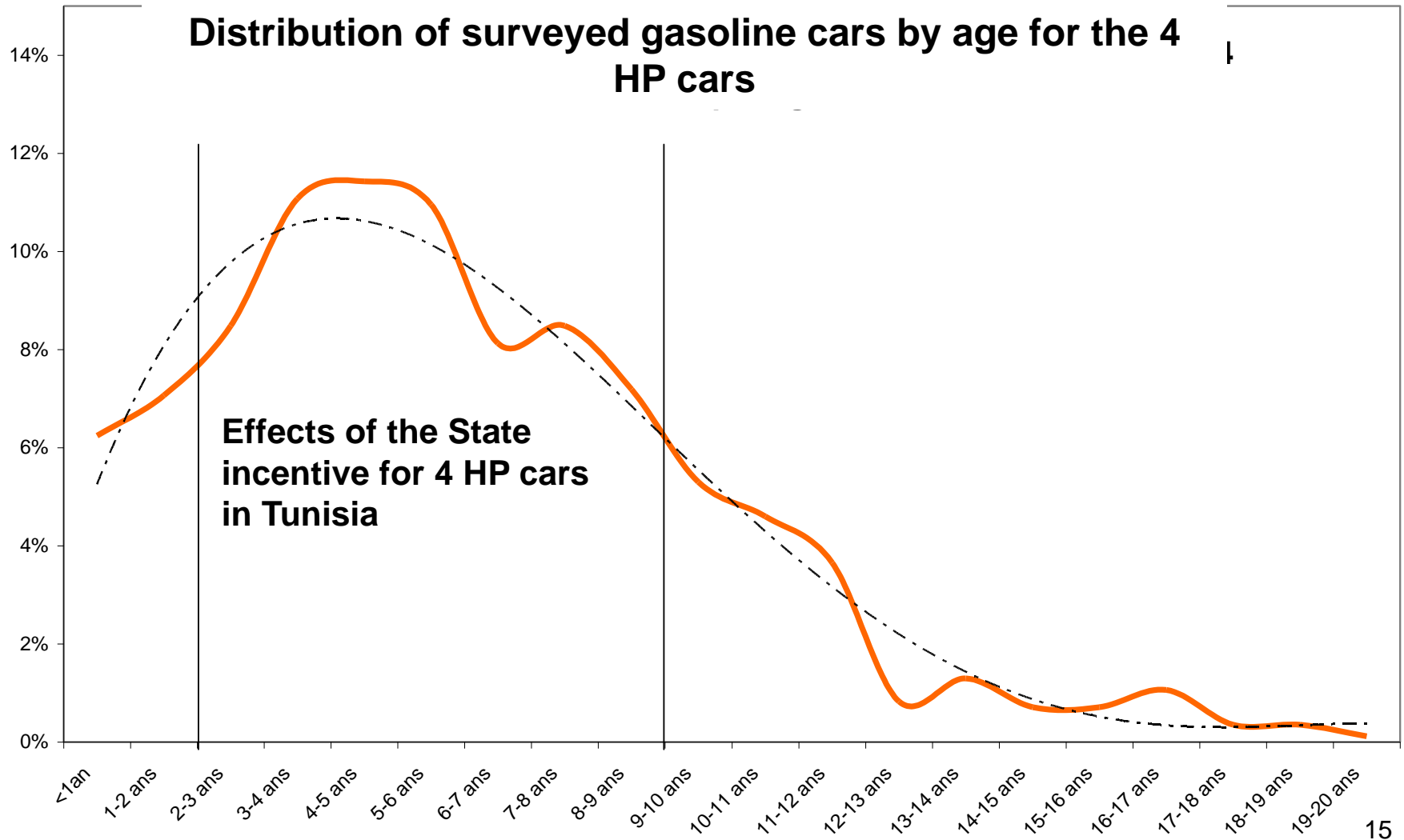
Surveyed fleet structure



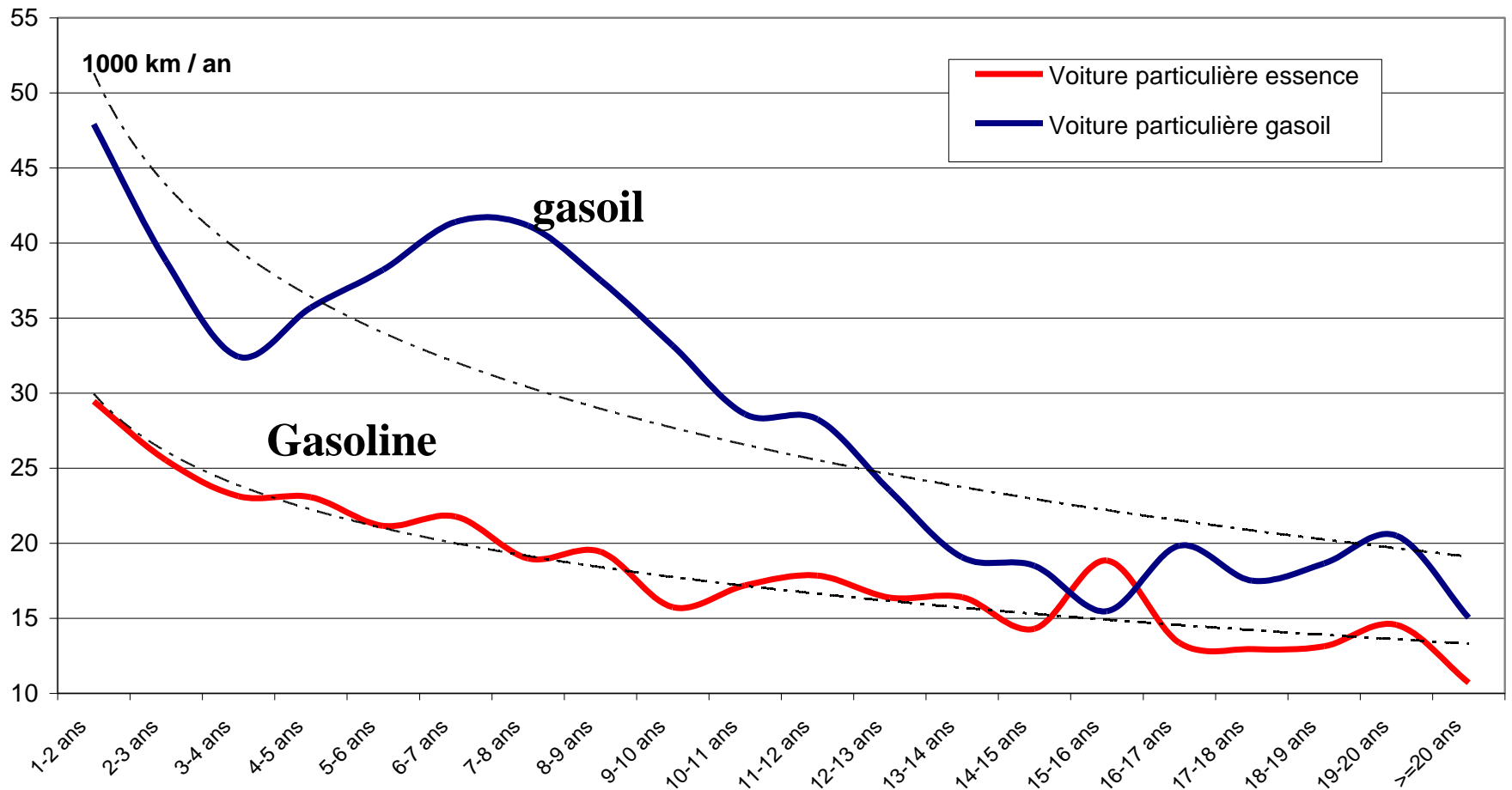
Surveyed fleet structure



Surveyed fleet structure



Gross results: Average Annual kilometers according to the age (unadjusted)



Adjusted results : Marginal annual kilometer according to car age (gasoline)

Not Adjusted

| Essence | <=3an | 3-5 ans | 5-10 ans | 10-15 ans | >=15 ans | Moyenne |
|-----------------------------|--------------|--------------|--------------|--------------|--------------|---------------|
| Voiture particulière | 35054 | 23094 | 19716 | 16789 | 12396 | 24 644 |
| dont <=4 CV | 22917 | 20613 | 18640 | 15945 | 12708 | 19 146 |
| 5-7 CV | 41230 | 26840 | 21892 | 17949 | 12277 | 30 882 |
| > 7 CV | 27153 | 25135 | 18694 | 16819 | 12296 | 19 130 |

Adjusted

| Essence | <=3an | 3-5 ans | 5-10 ans | 10-15 ans | >=15 ans | Moyenne |
|-----------------------------|--------------|--------------|--------------|--------------|-------------|---------------|
| Voiture particulière | 35054 | 22681 | 16338 | 10934 | 6657 | 15 919 |
| dont <=4 CV | 22917 | 24977 | 20613 | 10556 | 8081 | 17 372 |
| 5-7 CV | 41230 | 23413 | 26840 | 10064 | 5080 | 19 157 |
| > 7 CV | 27153 | 32235 | 25135 | 13068 | 6106 | 14 889 |

Adjusted results : Marginal annual kilometer according to car age (gasoil)

Not Adjusted

| Gazole | <=3an | 3-5 ans | 5-10 ans | 10-15 ans | >=15 ans | Moyenne |
|-----------------------------|--------|---------|----------|-----------|----------|---------------|
| <i>Voiture particulière</i> | 38 484 | 38 484 | 38 484 | 24 897 | 16 391 | 36 688 |
| dont <=4 CV | 45 317 | 31 367 | 27 810 | 18 226 | 18 846 | 29 155 |
| 5-7 CV | 43 834 | 37 166 | 41 375 | 24 732 | 15 890 | 35 843 |
| > 7 CV | 41 198 | 27 648 | 37 196 | 29 248 | 16 306 | 43 761 |

Adjusted

| Gazole | <=3an | 3-5 ans | 5-10 ans | 10-15 ans | >=15 ans | Moyenne |
|-----------------------------|-------|---------|----------|-----------|----------|---------------|
| <i>Voiture particulière</i> | 38484 | 38484 | 38484 | 24897 | 16391 | 27 286 |
| dont <=4 CV | 45317 | 31367 | 27810 | 18226 | 18846 | 25 413 |
| 5-7 CV | 43834 | 37166 | 41375 | 24732 | 15890 | 29 063 |
| > 7 CV | 41198 | 27648 | 37196 | 29248 | 16306 | 23 767 |



Thank you