

# LPG for Better Life Quality and Mitigating Energy Poverty Case: School LPG Project

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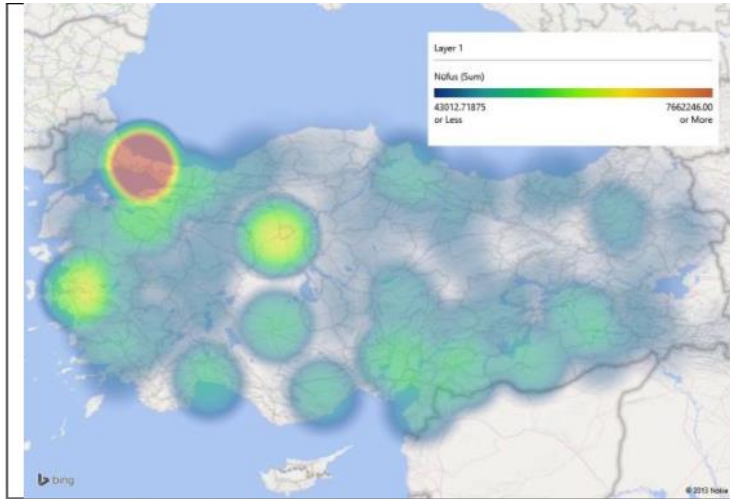


# Index

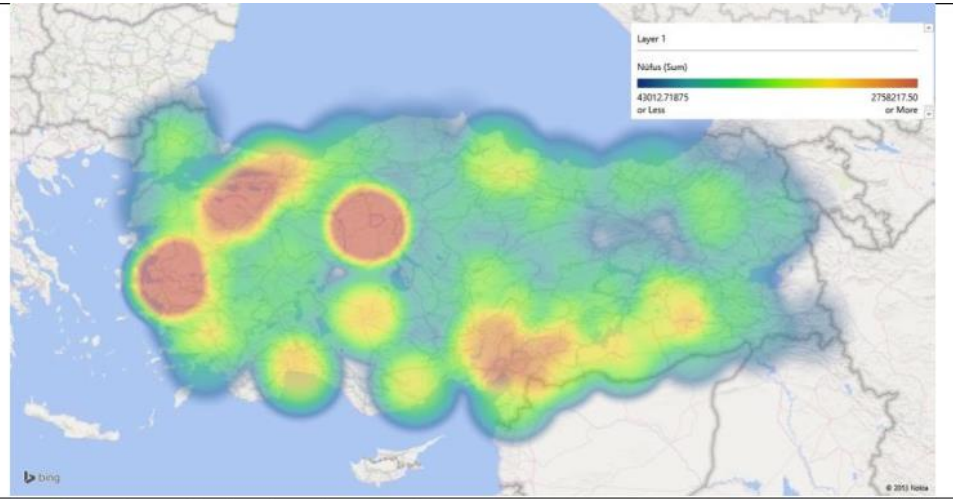
- Turkish LPG Market Overview( Through maps & analytics)
- Outlook (Monthly Forecasts)
- Rationality for such projects ( Geography & LPG market segmentation)
- Next Steps
- Conclusions

# Turkish LPG Market Outlook

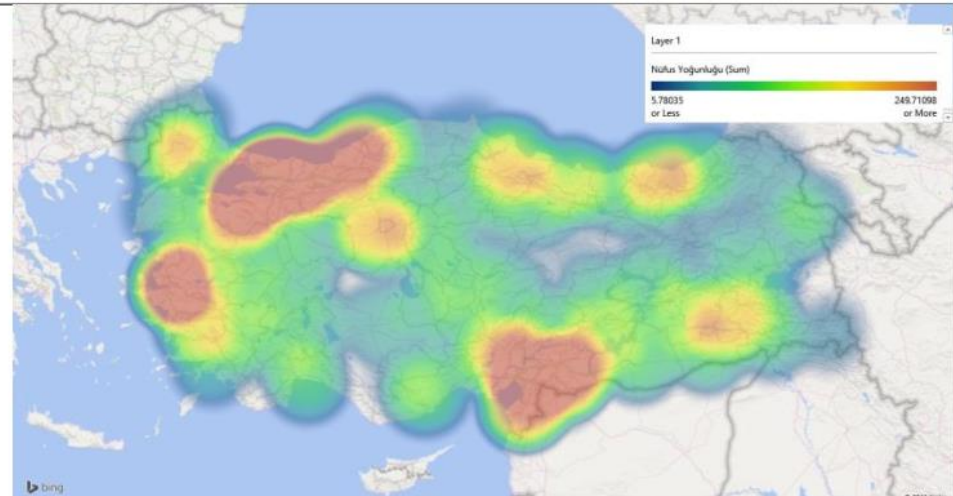
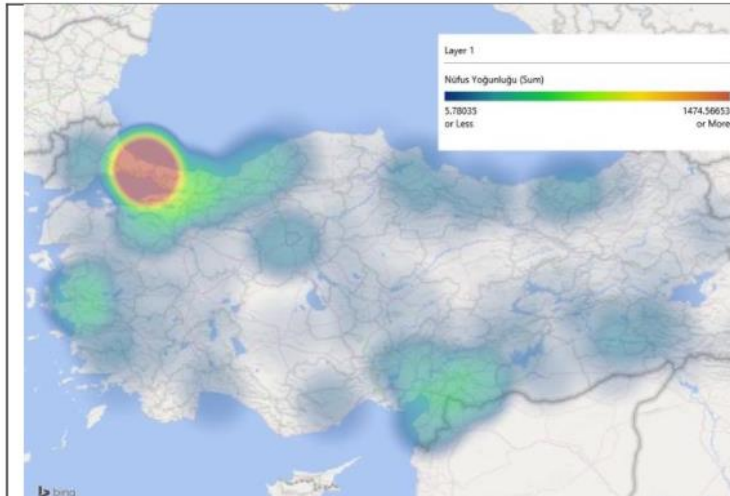
# Population / Population Density



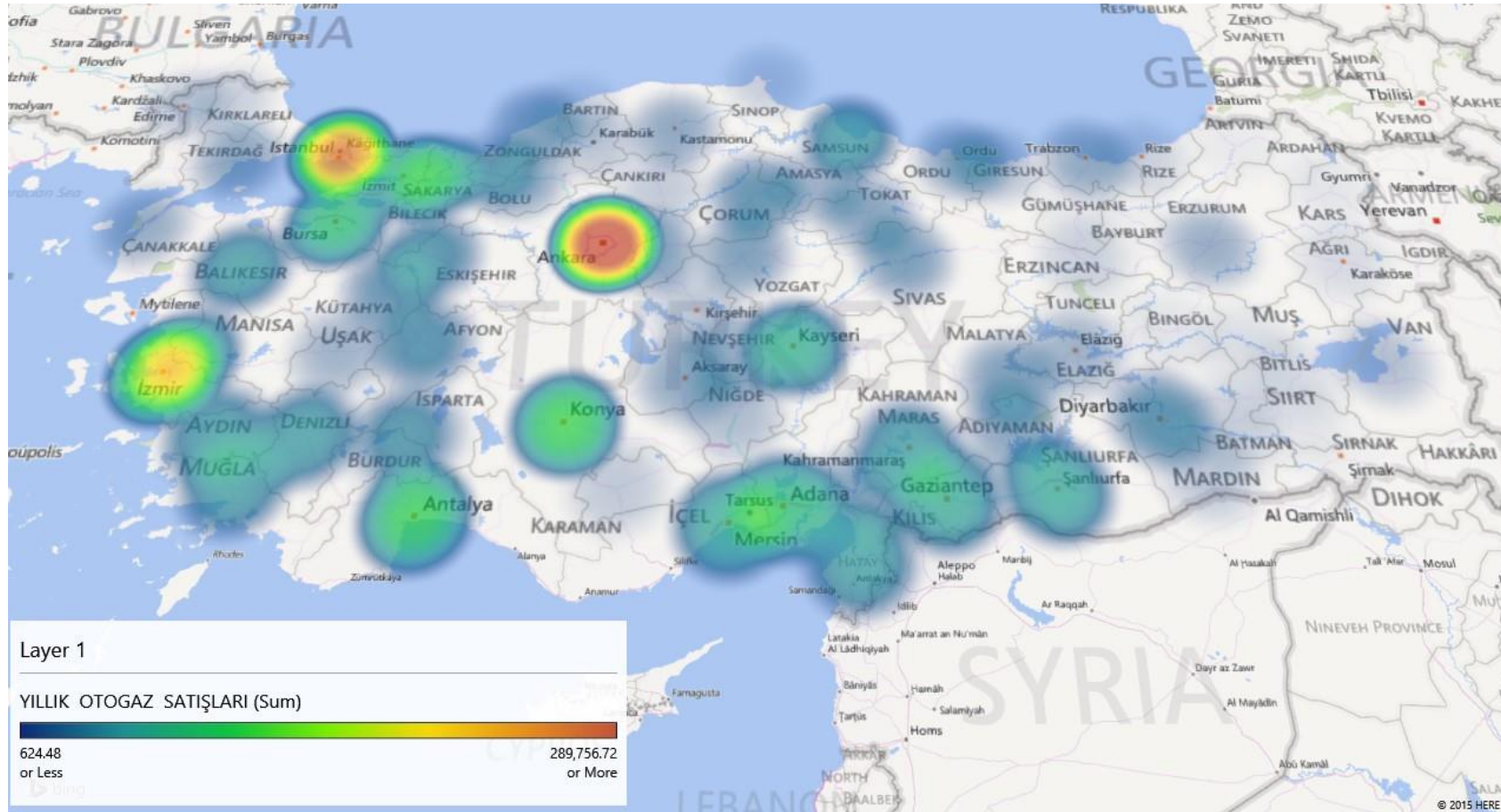
Nüfus – İstanbul ile



Nüfus – İstanbul Çıkarılmış Halde



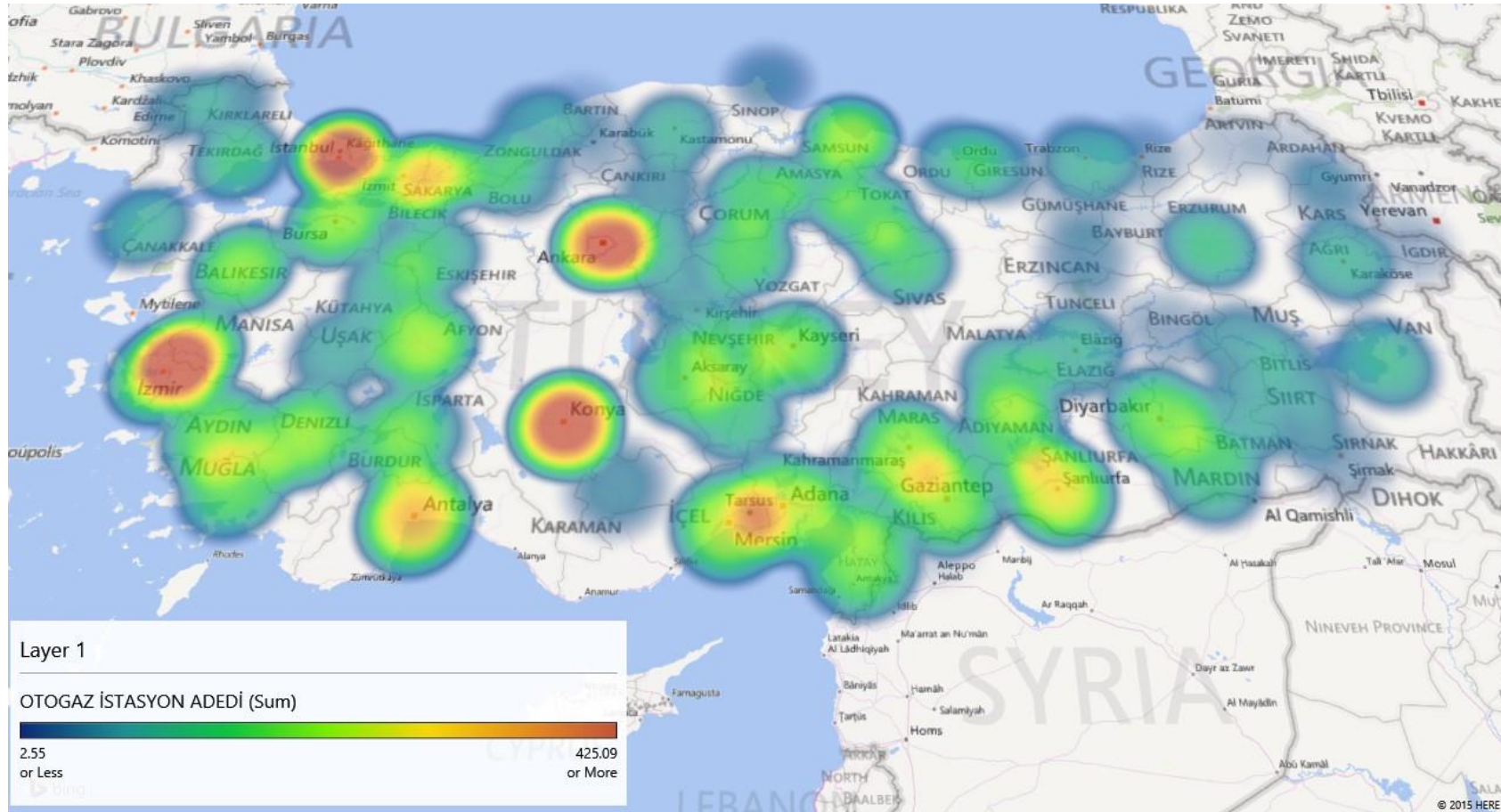
# Annual Autogas Sales



**LPG**  
EXCEPTIONAL  
ENERGY

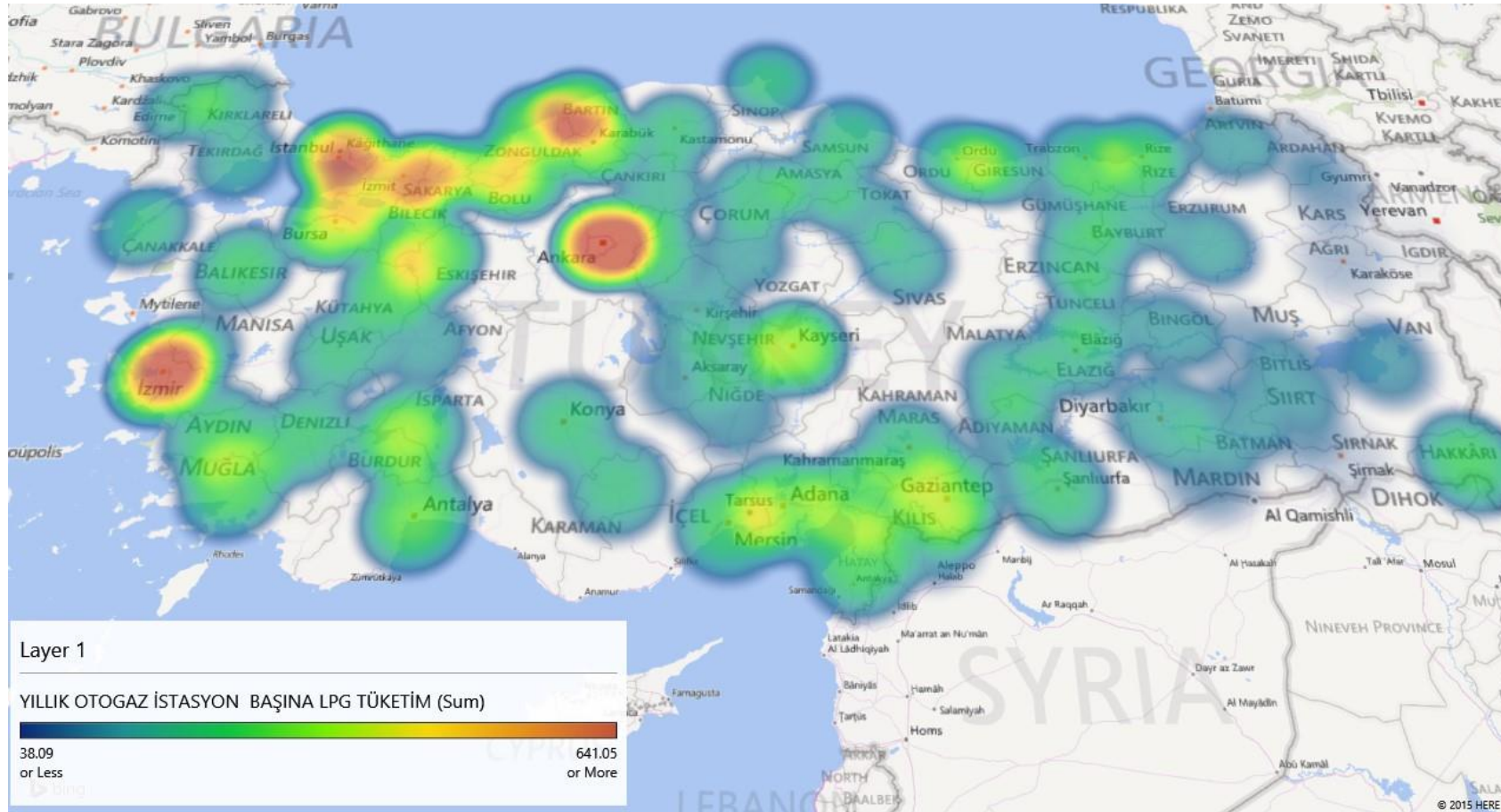


# Number of Autogas Stations



**LPG**  
EXCEPTIONAL  
ENERGY

# Sales per Autogas Station



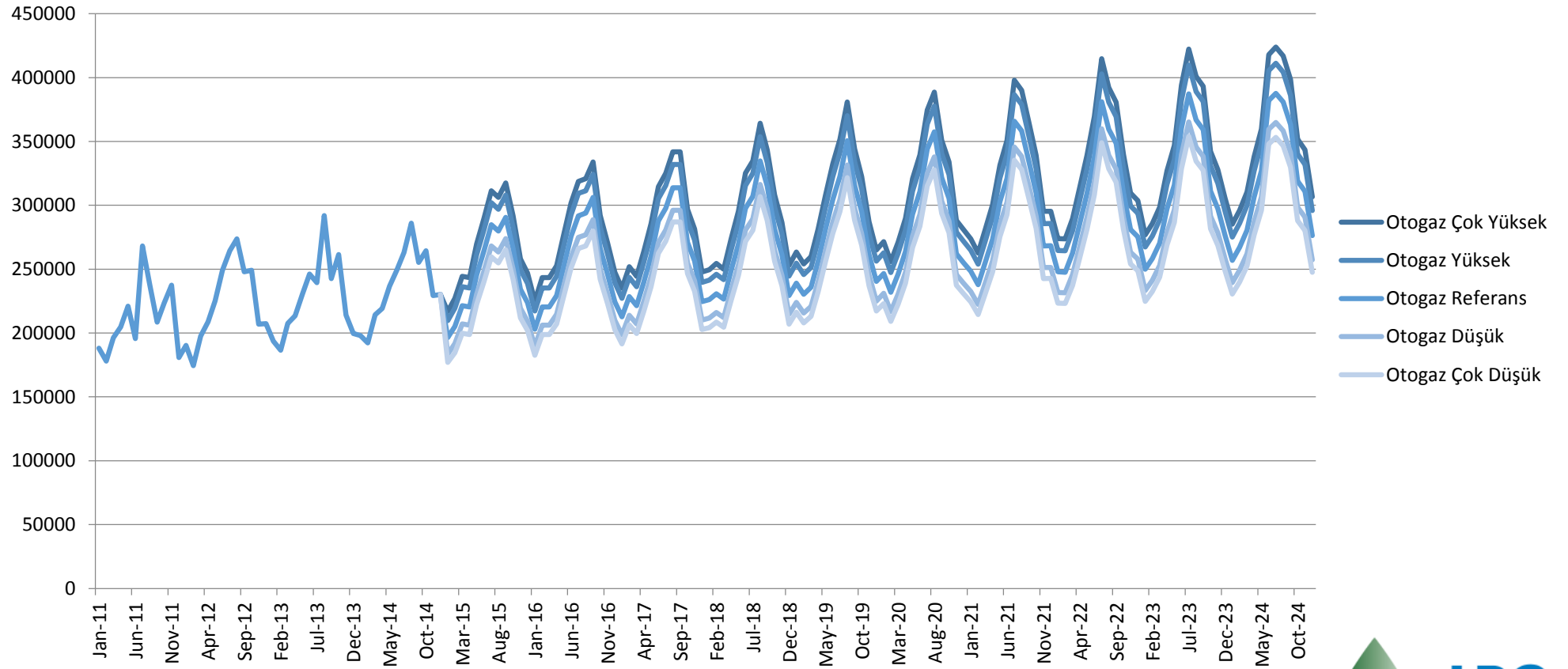
**LPG**  
EXCEPTIONAL  
ENERGY

# LPG Market Forecasts

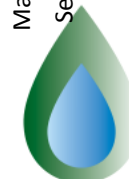
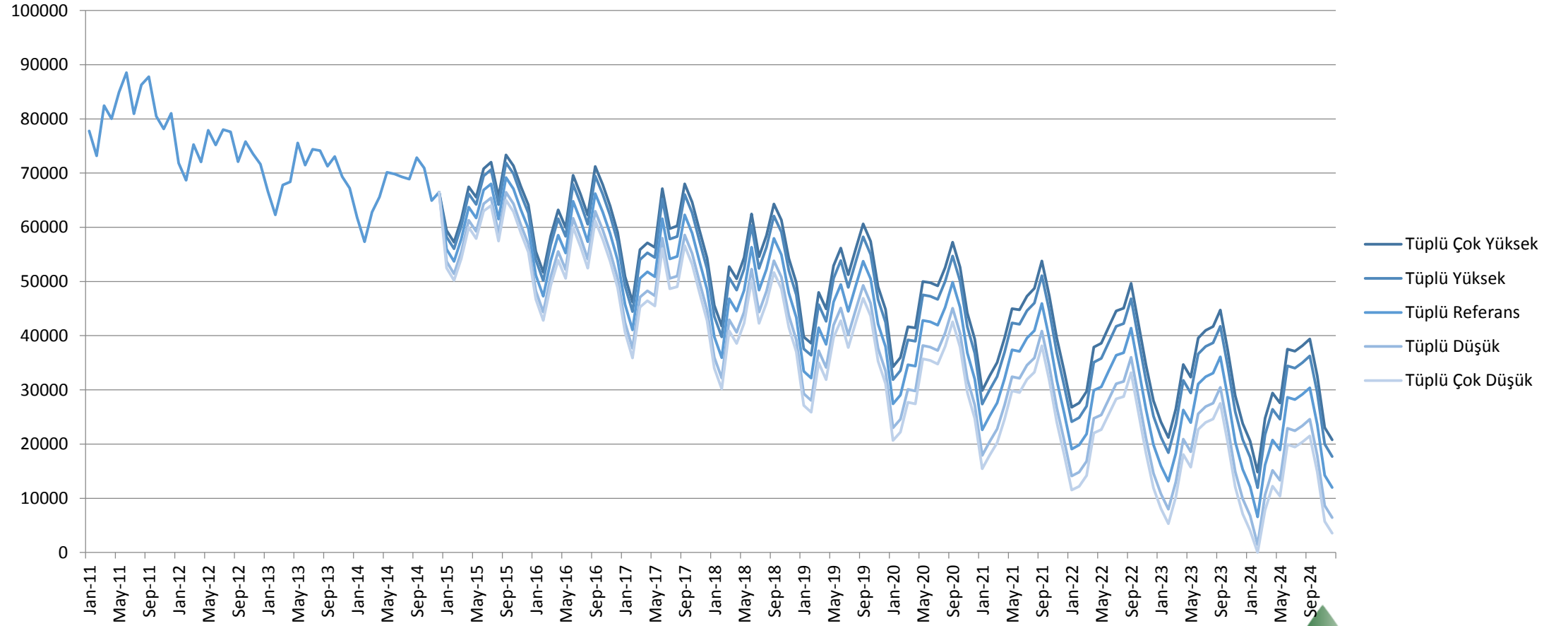
- 5 scenarios
  - Very high (growth), high, moderate(reference), low, very low growth
- Based on historical time series
- Monthly forecasts
- March 2015



# Autogas

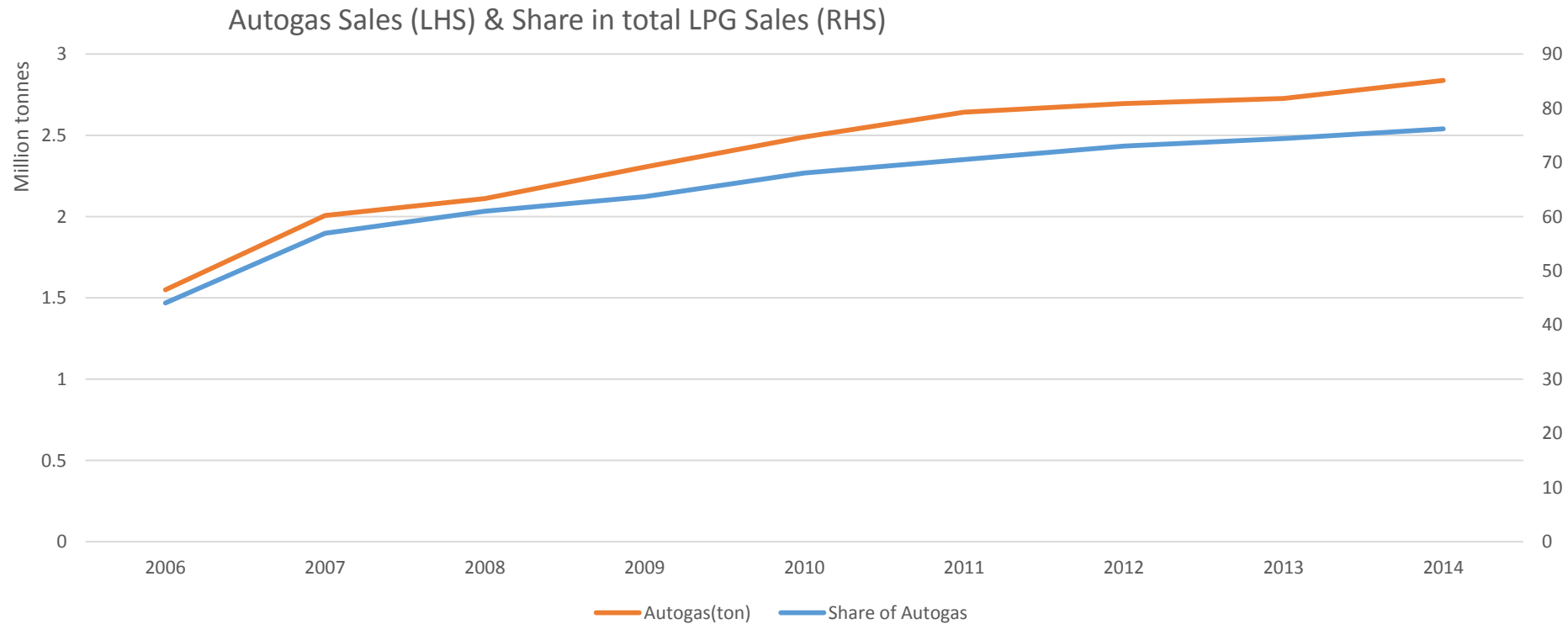


# Cylinder

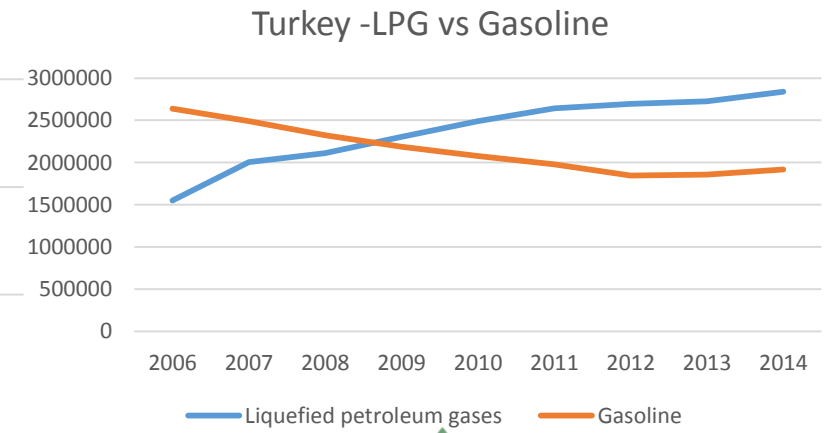
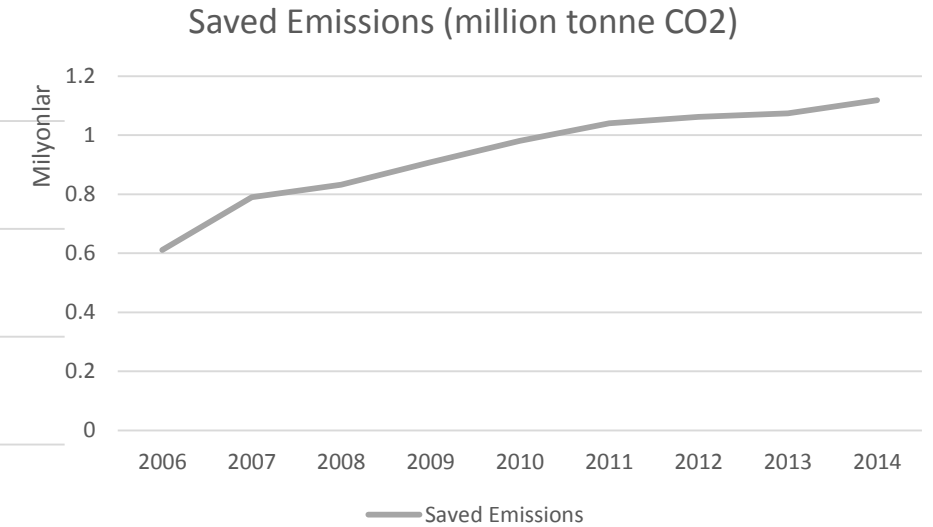
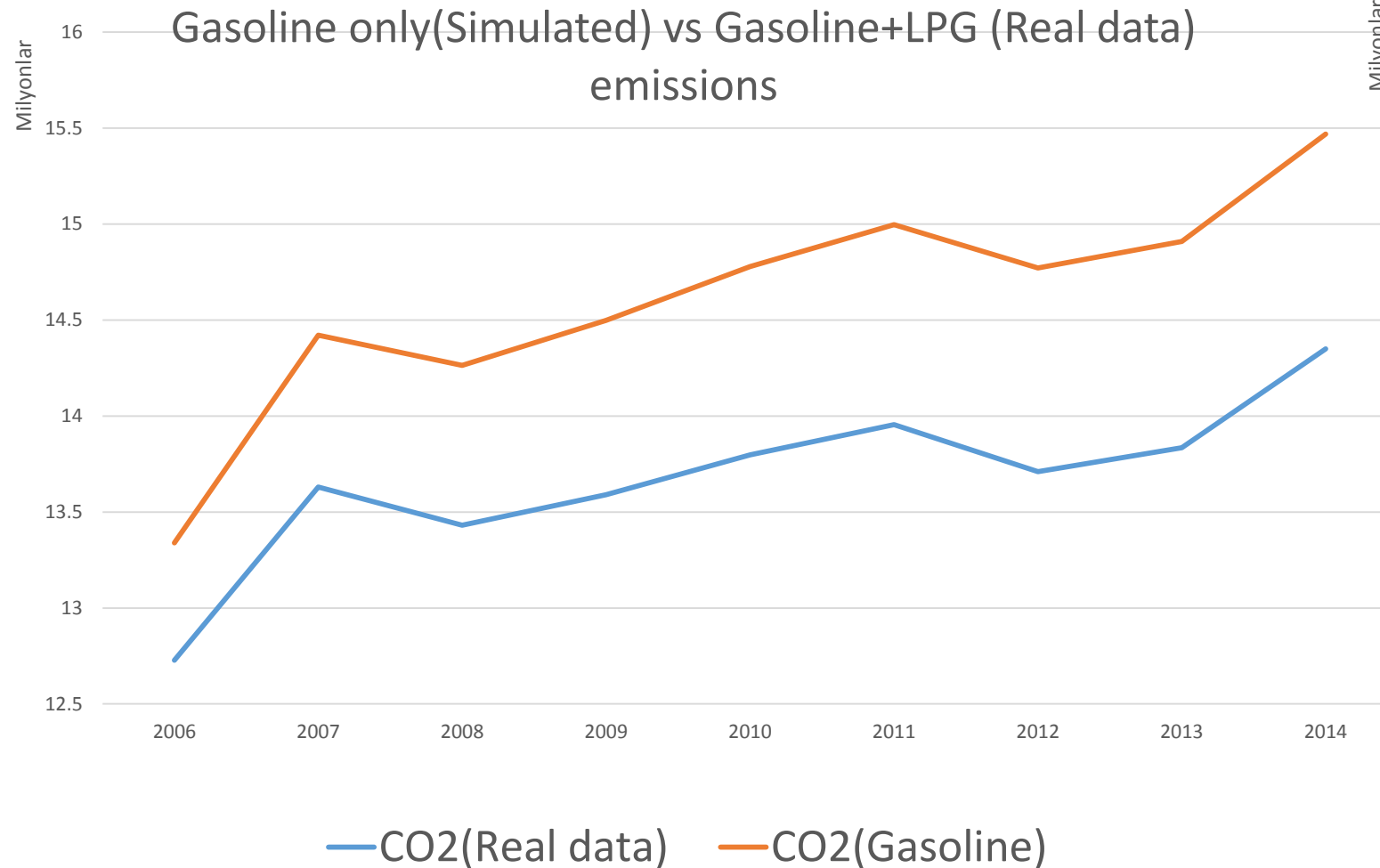


**LPG**  
EXCEPTIONAL  
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# Autogas Sales & Share in Total



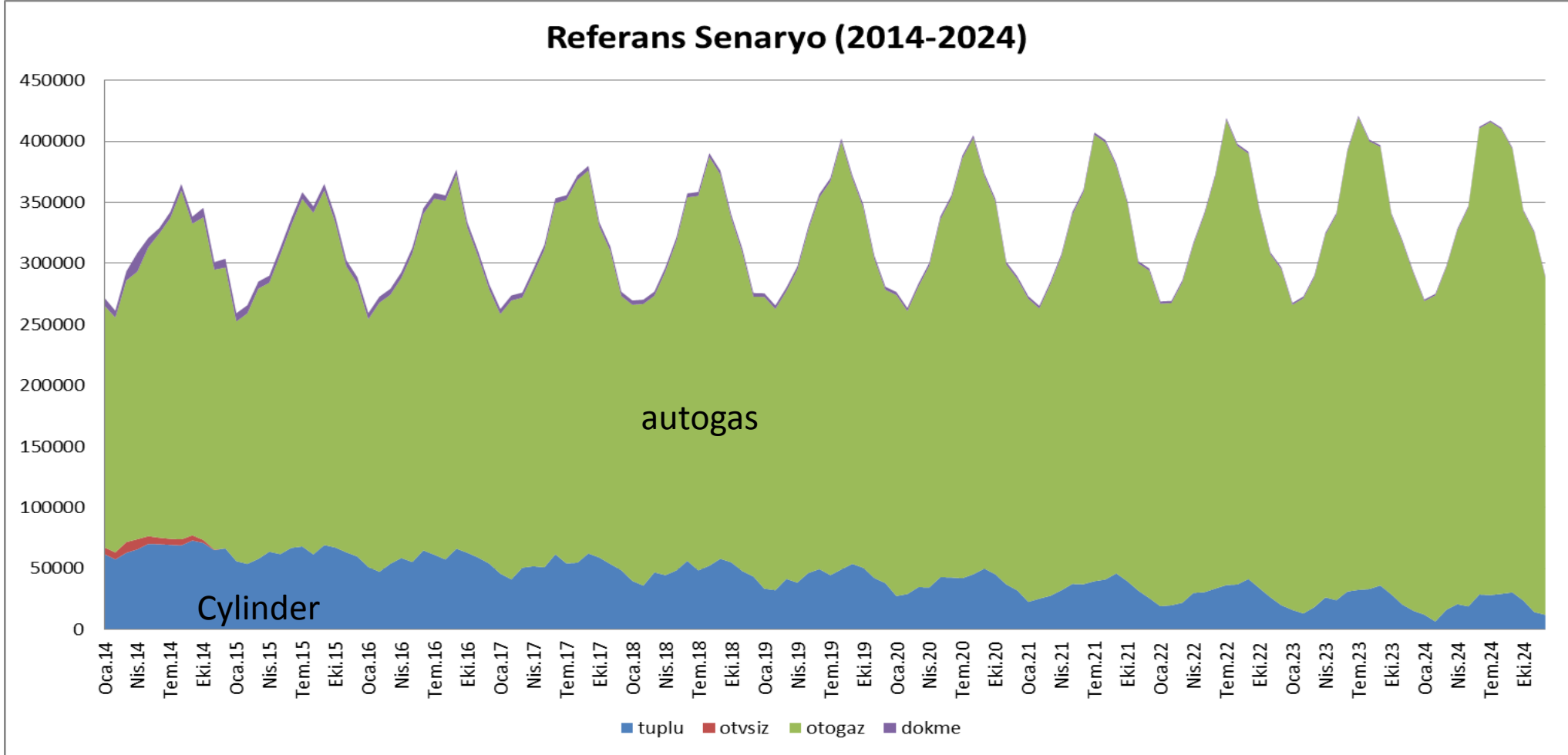
# CO2 Emissions



**LPG**  
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1 Ton LPG = 1.1 Ton Gasoline, Calorifically 1.07 times, calculations based on L/km on Turkish user experience

# Turkish LPG Outlook - Total





# Why?

- Government's decision to bring natural gas to all major districts
- Natural gas replaced bulk & cylinder sales
- Autogas (due to tax advantage) replaced gasoline



# Policy goals

- Balance bulk and cylinder usage in the total consumption
- Use LPG to impact lives of poor people
- Bring different stakeholders and let them commit to the goals



Fossil generation dominates  
Major Consumption  
High Economic Activity

Low lands  
Wind+Solar  
Consumption centers

High lands  
Lots of hydro  
Less Consumption

# Turkey's Energy Geography

## Two major projects

- Use LPG to heat rural schools
- Decrease infant deaths (Development indicator) at higher altitudes with special heating stoves (sensors & chimney outlet &)



# OkuLPG - SchoolLPG

- Where we can make the biggest impact?
  - Rural schools
  - Education
  - Air quality (importance for child developments)
  - Increase attendance (school is warmer than house)
  - + Japanese idea (School as a center for the village especially after major disasters)





# SchoolLPG – Possible Stakeholders

- Ministry of Education (Decides the schools to implement, tracking attendance)
- Chamber of Mechanical Engineers (Technical responsibility)
- LPG Distribution Companies (Hardware and LPG supplies)
- Public Health Administration (Air quality & tracking the results)
- Ministry of Development (Based on pilot results, decision for long term commitment)



# Which schools?

- Less than 5 classrooms
- No chance of getting natural gas in the next 20 years time frame (not economical)
- Rural



# Economic incentives

- Turkish law gives tax breaks for school building or refitting
- The free LPG supplied by distribution companies will be tax deductible except for Special Consumption Tax
- Creating a new market for LPG Companies
- Cleaner schools for Ministry of Education (with less manpower – no one to clean stove)



# Statistics to track

- Attendances
- Visit to health clinics by school children
  - Change in frequency
- Air quality
- Surveys
  - Children
  - Teachers
  - Parents



# For competition

- After 2 year pilot program, schools will buy LPG through tenders
- What will happen to bulk tanks?
  - Chamber of ME will inspect and transfer with relevant checks
  - An electronic system to track life cycle
- Responsibility will be transferred to new LPG supplier after tender





# Next Steps – Quest for High Impact projects

Protocol signing between relevant parties

- For 2015 we have a pilot school, but time frame is short

Research on the feasibility of next Project

Preventing Infant Deaths and improving Turkey's Development Indicators



# Conclusion

- Turkish autogas market is in healthy condition
- But bulk & cylinder segments were ebbed a lot
- Tried to find the areas where LPG has high impact
- Communicate stakeholders
- Make sure economic incentives are there
- Start the pilot
- Track the results

# Thank you

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