

New mobility and power generation policy to reduce national deficit

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Portuguese families and companies spend 41 thousand million euros (G€) in mobility and electricity, i.e., about 24% of their Gross Domestic Product (GDP), an unsustainable burden for most households. This is due to a number of strategic policy mistakes. A change of policy is urgent, representing a significant opportunity to reduce the national deficit. As an alternative to the current policies, we propose the cessation of perverse subsidies and the active promotion of energy efficiency in all sectors — housing, industry, services and transportation — as well as an optimization of the power generation infrastructures.

Mobility

Mobility relying on the use of the private car has a cost of 34 G€, i.e., about 20% of the national GDP. In Portugal, about 62% of the population commutes every day by car. Overall distance travelled by passengers (pkm) on land modal split is 84% private cars, 5% rail, 11% others. The average cost of private car displacement can reach 400 € per month (vehicle cost + insurance + maintenance + fuel for an average of 9207 km/year), higher than the housing costs. In the Metropolitan Area of Lisbon, inadequate tariffs and insufficient inter-modality caused the share of total public transportation modes in pendular movements to fall from 45% in 1991 to 27% in 2011.

In order to revert this situation, it is urgent to set a new strategy for passenger mobility, privileging the investment in public transport, which promotes three times more jobs than private car and has external costs (energy, pollutant emissions, cost to consumer) up to four times smaller.

Portugal has 2700 km of highways, with a density of 30 km/1000 km² (almost double the EU average of 16 km/1000 km²). 35% of those highways do not have and will likely never have traffic to justify their existence. Most of them were built under “public-private partnerships” where in practice all the financial risk is assumed by the Portuguese State. Official estimates indicate that compensation payments (mostly for empty, useless highways) in the next decade will be in the order of 1 G€/year. This should have been renegotiated on the basis of fair payment for costs incurred or services rendered, but never was. Those concessions should either be revoked or subject to fair taxation — we suggest about half of estimated payments.

The elimination of tax exemptions for the acquisition of “company cars” for personal use could mean an added tax revenue of 400 M€/year.

Only 6% of freight tonne-kilometres are transported by rail in Portugal, far below EU average (18%). The uncertainty of the policy for freight will result in severe economic repercussions for Portugal. The commitment to the Connecting Europe Facility, which is an investment with high Community co-financing and declared as a priority by the European Commission, would allow passage without transshipments for EU freight trains with electric traction. The Portuguese government has been ignoring this project; this attitude will isolate Portugal, and obligate the transfer of goods at the border, with increased transportation costs and atrophy of the seaports.

Electricity

Electric power consumption in Portugal represents a cost of 7.2 G€/year, about 4% of GDP. This cost may increase steadily in the future, due to dramatic errors of a policy that has favoured investment in excessive production capacity and ineffective projects, such as dedicated biomass thermal power plants or new large dams.

Total energy consumption in Portugal has been declining since 2005; electricity consumption has been declining since 2007 — well before the crisis set in. This reduction results from a combination of modest investment in energy efficiency in all sectors, and structural changes such as the reduction of energy intensive industry. Despite this evidence, all official scenarios for electricity use have assumed exponential growth and the need for more and more production capacity. The result is a gross excess of heavily subsidized installed capacity, existing and on-going. The ratio between total installed capacity and peak demand passed 2.0 by 2009. The “coverage index”, defined as the ratio between actual available power (considering technical constraints of each power plant) and peak demand in the grid, should be around 1.1 considering both security and cost-effectiveness. The Portuguese electric system approached that mark in 2008-2009, reaching 1.15 by 2010, 1.2 by 2011, 1.3 by 2012, and is expected to increase yet. Average interruption time in the Portuguese grid has been below 1 minute/year since 2005 — another clear indicator that our grid has been quite secure for a long time and does not need more subsidized high-impact production capacity.

Subsidies to electricity producers, particularly thermal and hydro power plants, have always existed, allegedly for security purposes. In the past few years such subsidies have risen to about 600 M€/year, included in the “general interest economic costs”, now paid by the consumer. Since the excess available power is now three times the necessary to comply with security standards, we suggest that such expenditure is grossly excessive and should be cut by about two thirds — we could thus save 400 M€/year.

The most striking example of errors in the choice of projects is the National Program for Dams with High Hydroelectric Potential (known by its Portuguese acronym PNBEPH), which served as an “umbrella” to approve nine new large dams. The performance indicators of this program are appalling: a production cost of over 120 €/MWh (more than twice current average production cost, five times more than refitting old dams, ten times more than energy efficiency measures); it would satisfy only 0.5% of gross consumption of the country (3% of electricity), corresponding to a decrease of the external dependency and greenhouse gas emissions by 0.7%; it implies perverse direct subsidies amounting to 30 M€/year; an effective use of nominal power of only 8% (national average of existing hydropower is 23%); a future total burden to the consumers estimated at 15 G€, or 215 M€/year for 70 years, or 3800 €/family, or an increase of 8% in the electricity bill of families. Those dams are virtually useless, because demand is decreasing and we already have excess capacity; plus they cause the loss of very important cultural heritage, jobs in tourism, biodiversity, agricultural land, and unique natural and cultural landscapes. By comparison, energy efficiency measures in the electricity sector alone have a saving potential of 25-30% of present demand, at a cost five to ten times lower than new dam production.

The tariff deficit, caused by historical tariffs below production cost, is another burden on the consumers and taxpayers. This political option was taken for electoral reasons and had the effect of inhibiting investments in energy efficiency for a long time, favouring electricity business and new power construction. This deficit has increased in recent years, standing now at about 4 G€.

Other perverse subsidies, such as energy tax exemptions in industry, heating fuel and agriculture, amount to about 200 M€/year. Most of those exemptions should be eliminated.

Sources

INE — Instituto Nacional de Estatística

Eurostat

World Bank

Ecorys

EDP — Electricidade de Portugal

REN — Redes Energéticas Nacionais

EEA — European Environment Agency