

# Cooling Mapping & Benchmarking Study: Russia

## Rationale for Benchmarking RACs

**Efficiency of RACs is critical and could be improved through cross-economy comparisons, but those comparisons are challenging.**

- RACs contribute heavily to peak load, and are being purchased at rapidly rising rates in many economies.
- Despite global trade, information is scarce about RAC market characteristics, minimum energy performance standards (MEPS), and labels.
- It is difficult to compare RAC performance and efficiency policies across economies due to variations in test procedures and efficiency metric formulas.

*The Cooling Benchmarking Study enables international comparison of the energy efficiency (EE) performance of commercial- and residential-sector room air conditioners (RACs).*

## High-Level Summary

This analysis provides a snap-shot of the air-conditioner market in Russia. This resource for policymakers and standards and labeling (S&L) experts includes:

- An overview of historic and current RAC market characteristics; and
- Estimated energy consumption for air conditioners.

## Implications on Policy Setting for RACs

- Without more efficient ACs, growth trends in the Russia AC market can significantly affect summer peak loads and overall electricity consumption.
- To fully assess the savings potential of S&L policies for RACs, more market and energy use information is needed.
- With increased residential purchases, a consumer outreach campaign supporting S&L programs has the potential to affect a large segment of users.

## Mapping Report Findings

### • Russia's Energy Efficiency Labeling Regulation

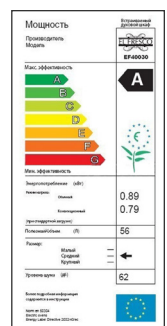
The Russian energy-efficiency (EE) label for air conditioners is based on the European Union design.

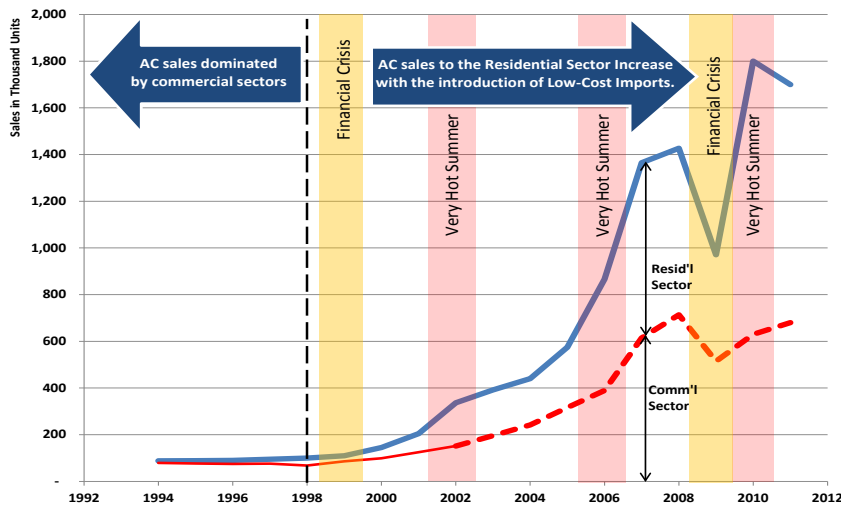
The cooling-mode efficiency is ranked by a scale of "A" (highest efficiency) to "G" (lowest efficiency), according to the measured energy efficiency index.

### • RAC Market in Russia is Growing

Since the mid-1990s, sales of AC units in Russia have been growing steadily, reaching an average of 1.45 million units per year from 2007 to 2011. Available data suggests that the stock of AC units will continue to increase in future years.

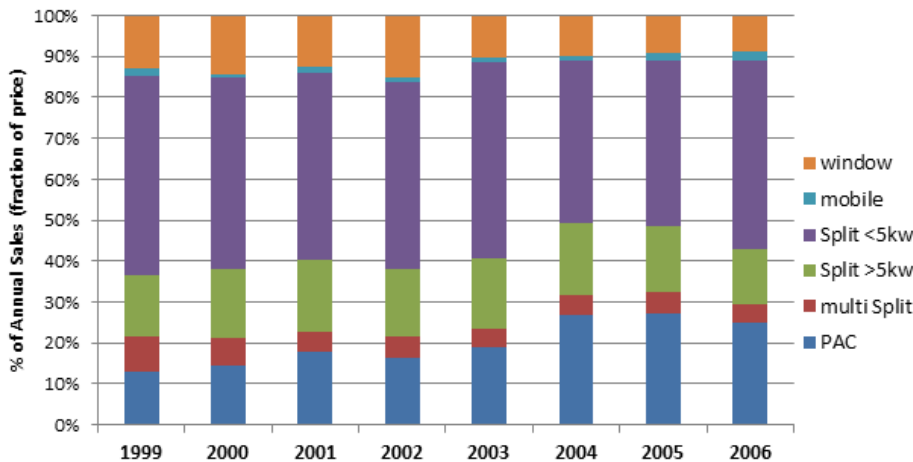
More than 97% of AC units sold annually are imported to Russia, mainly from Japan, Korea and China. Available data shows that the market is dominated by Japanese manufactured AC units, accounting for 47% of the annual AC sales in 2006. Market share of Chinese-made ACs has been growing rapidly from 6% in 2002 to 27% in 2006.





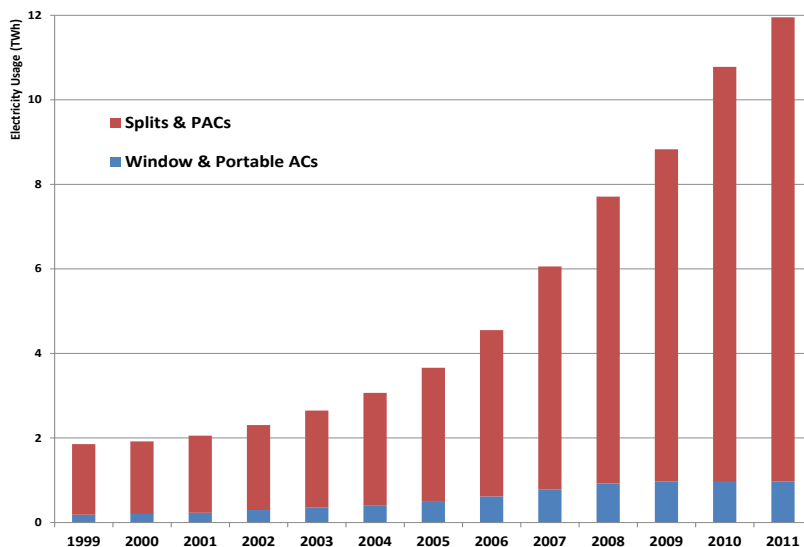
## Summer Temperature and Financial Down-turns Affect Annual RAC Sales

Generally residential sales volumes fluctuate with summer temperatures: they increase during years with hot summers, sometime affecting sales in the following year, and decrease during years with cool summers. In the both residential and commercial sectors, AC sales were influenced by the financial crises in 1999 and 2009.



## RAC Technology Trends Favor Split Systems

The AC market in Russia is primarily dominated by split system units. Window, mobile and wall-mounted splits under 5kW are used in most of the systems sold in the residential sector. Larger wall-mounted splits, multi-splits and PAC units are predominately used in commercial applications.



## Energy Use of RACs is Increasing Rapidly

RACs in Russia were estimated to consume about 12 TWh of electricity in 2011, a 6.5 times increase from the 1999 level.

- The majority of energy is consumed by split and packaged AC units, consuming about 11 TWh.
- Window and portable AC unit energy usage has leveled off since 2008 at about 1 TWh.

\*The calculation of energy consumption is based on the assumption that average EER values in Russia are similar to 1-Star Efficiency Levels in Australia for AC units.

This Mapping Report for Russia is supported by the ClimateWorks Foundation (CWF), the European Bank for Reconstruction and Development (EBRD), and the Super-efficient Equipment and Appliance Deployment (SEAD) initiative. CLASP completed the Cooling Mapping & Benchmarking Study for Russia in collaboration with Sticker Associates Inc.