Russia

Building Code Implementation - Country Summary


Section I: Code Development

History

Starting year

Energy codes in Russia can be said to date back to 1955, when Construction Norms and Rules (Russian abbreviation SNiP) first linked building envelope construction and heat loses and established norms (limits) for energy characteristics of construction and heat losses. The most recent, active version of the energy code (SP 50.13330.2012, Thermal Performance of Buildings) was adopted in 2003 and revised in 2012.

Timeline/road map

In Russia, energy codes were developed by experts from government institutes (such as the Russian Academy of Architecture and Construction Sciences) and enforcement agencies, as well as nongovernmental organizations, such as Association of Engineers for Heating, Ventilation, Air-Conditioning, Heat Supply and Building Thermal Physics (ABOK). There is no particular timeline or roadmap for updating the energy code, but since 1955, the code was significantly revised in 1962, 1971, 1979, 1995, 2000, 2003 and 2012. The 1995 and 2000 revisions reduced the norm for energy expenditure per square meter for heating a building by 20% and then by 40%, respectively. In addition, since the 1990s administrative units of the Russian Federation have adopted Regional Construction Codes, which could not, however, contradict the national code. The first regional code was developed for Moscow in 1994 not only by government institutes (many of which are housed in Moscow) but also other local expert organizations (e.g., CENEf) and an international NGO, the Natural Resources Defense Council. With the exception of Moscow, regional codes do not include stricter requirements for energy efficiency in buildings than the national codes.

The latest revision of the current energy code (SNiP 23-02-2003, Thermal Performance of Buildings) took place in 2012, incorporating feedback necessary to make the code more operational. The code can be considered mandatory for all of Russia, even though some provisions are voluntary. More recent proposals, however, offered to make the energy efficiency provisions voluntary.
Existing codes

Structural coverage

<table>
<thead>
<tr>
<th>Scale (National, regional, local, etc.)</th>
<th>Building size threshold</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Residential buildings</strong></td>
<td></td>
</tr>
<tr>
<td>New buildings</td>
<td>None, but does not cover buildings that are heated less than 5 days/week or 3 months/year, or temporary buildings that exist for 2 or fewer heating seasons.</td>
</tr>
<tr>
<td>Existing buildings for retrofits</td>
<td>None, but does not cover buildings that are heated less than 5 days/week or 3 months/year.</td>
</tr>
<tr>
<td><strong>Commercial buildings</strong></td>
<td></td>
</tr>
<tr>
<td>New buildings</td>
<td>None, but does not cover buildings that are heated less than 5 days/week or 3 months/year or temporary buildings that exist for 2 or fewer heating seasons.</td>
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Russia has a mandatory national building energy regulation on Thermal Performance of Buildings, with some voluntary provisions. The code follows the performance-based approach as the major compliance pathway. Compliance enforcement mechanisms like plan review and pre-occupancy inspections are carried out by third parties and state or local governments. Moscow and several other states or cities have adopted their own regional codes.

Measures covered

- Envelope [focused on heat losses from the building shell]
- Heating and air conditioning [A SNiP on HVAC limits air in-flow losses in closed-loop A/C to 6%]
- Option for trade-off approach
- Option for performance-based approach [This appears to be the main approach.]
Correction/new codes

Motivation/policies for improving existing building energy codes

The primary motivation for improving existing building codes is the Federal Law on Energy Efficiency FZ-261 of 2009. The law demands that public facilities reduce their energy consumption by 15 percent by the end of 2014 under “comparable conditions,” using 2009 as the baseline year; attempts to phase out incandescent light bulbs; and obliges public facilities to undergo energy audits, install meters, and obtain energy certificates. In addition, building energy efficiency is included in Russia’s Energy Strategy (revised approximately every 5 years). Finally, Russia has been decreasing subsidies for utility payments for the general population, and utility costs have risen sharply over the past 10 years.

Another Decree from 2011, N 18, On Affirming Rules for Establishing Energy Efficiency Requirements in Buildings, Facilities and Installations, mandates that, after establishing the base standard for energy efficiency in buildings, energy consumption should be reduced every 5 years. Thus, this legislation creates momentum for improving energy efficiency in buildings, including through adoption of stricter regional codes.

Revision schedule

The latest revisions took place in 2012, but several organizations are proposing changes. However, there is no set schedule to incorporate new revisions.

Involvement of stakeholders in the development of codes

There have been public hearings in the past on draft codes, before they were adopted. Stakeholders are involved through professional associations.

Key methods used to engage stakeholders in the code development process

Draft documents, before they are considered to become laws, are usually posted on a government website or leading NGO websites. The draft documents present up-to-date information and analysis. Expert organizations commonly compete to have their points of view considered.
Section II: Code Implementation

Administration

Administrative/enforcement structures

Mix of models

In Russia, all major structures play roles. Regional governments typically administer and enforce energy codes (Government Architectural and Construction Inspection); the federal government (Rostekhnadzor’s Construction Division) provides oversight of regional enforcers and conducts planned and random checks. For commercial projects, like government-tendered construction or large-scale construction, clients can hire technical oversight experts, private construction companies that in turn are members of self-regulating organizations and that are certified to oversee construction. Activities of third-party experts are also monitored by the federal government (Rostekhnadzor). Such companies could be on site almost daily to ensure that work is done as planned, by the code, and on schedule, i.e. ensure technical oversight. Independent parties can also be involved post-construction, when they can issue an expert statement that the building is in compliance with the code (this is required for certain types of construction). In addition, architects are required to oversee that construction is in accordance with specified instructions and design.

The roles of stakeholders

<table>
<thead>
<tr>
<th>The role of federal/central government</th>
<th>Design</th>
<th>Construction</th>
<th>Pre-occupancy check</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oversight of enforcement agencies</td>
<td>None</td>
<td>Oversight of enforcement agencies</td>
<td></td>
</tr>
<tr>
<td>The role of state/provincial and local government</td>
<td>Issue permits and certificates of compliance</td>
<td>None</td>
<td>Inspect completed construction, issue a technical passport, register building</td>
</tr>
<tr>
<td>Involvement of third parties and their role</td>
<td>Independent review of construction plan (not required)</td>
<td>Technical oversight of construction (required for certain types of construction)</td>
<td>Independent certification</td>
</tr>
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</table>
Requirements for commissioning before occupancy

With the exception of Moscow, commissioning is not required. Recently, Moscow city issued legislation requiring commissioning with use of a blower door test for selected rooms and an infrared camera before a building can be approved\(^1\). However, compliance is not universal.

Requirements for energy audits after occupancy

Energy audits were required in all existing public buildings with the adoption of law 261-FZ. The quality of these audits tends to be low because of lack of technical capacity and funding for them.

Tools used for compliance checking

Software used for compliance checking

None; instead, codes include formulas and rely on calculations. However, some software is used to assist with calculations and produce more precise calculations. However, the software is not specific for code compliance. Examples of such software are Audytor OZC (http://www.sankomsoft.ru/audytor-ozc), a Poland-based software tool, or a package of programs from ABOK (http://www.abokbook.ru/soft/), which is maintained by Russian expert associations. Also, there are simple programs that help prepare energy performance certificates.

Capacity building and education

Education and capacity building programs that support code implementation

There are no capacity-building programs that support code implementation and there is a shortage of experts on the topic. However, organizations such as ABOK and Rosteplo conduct professional meetings, webinars and trainings.

Section III: Compliance & Enforcement

Penalties, incentives and other mechanisms for improving compliance

Penalties for non-compliance with energy provisions in codes

- Fine
- Refusal of permission to construct

\(^1\) http://tv-laboratory.ru/corporate/jkh_i_kommercheskaya_nedvijimost/
Incentives/rewards to encourage people to go beyond minimum level

Green building rating, otherwise no.

Compliance assessment

Assessments on rate and effectiveness of compliance

No assessment is done, although individual studies have shown large discrepancies between calculated thermal performance of buildings and that measured through infrared cameras. Such studies have shown that buildings used twice the amount of energy (when measured) compared to energy consumption calculated during the design process.

Number of code compliant permits issued per year

Tens of thousands.

Section IV: Building Materials & Energy Performance Certificates

Building materials (e.g. windows, insulation, HVAC, lighting)

Rating building materials

Since Russia does not follow a prescriptive approach (or, in certain regions, only a partially prescriptive approach), the ratings are not directly prescribed in the code.

Tested by certified test labs

Yes.

Providing samples for the tests
Typically random samples. Instructions for each material and test type specify the size of the sample.

Labels showing the ratings for building materials
Materials have labels (typically A though D) on their various properties, including energy.
Differences in approaches for diverse categories of building materials  

Building materials are classified as either “construction” or “special purpose” (insulation, acoustic and finishing materials).

**Energy Performance Certificates**

*Building codes and energy performance certificates*

Building codes incorporate EPCs, called energy passports, which are required for new buildings.

*Energy performance certificates replace codes in some regions/areas*

Russia follows a performance-based approach.

*Differences between energy performance certificates and performance-based approach of code compliance*

No difference. Energy passports certify that the standard on Thermal Performance of Buildings is met and list additional properties.

*Enforcement of codes and energy performance certificates*

They are enforced together.

*Existence of national registry database for energy performance certificates*

No national registry is publicly available, although the Ministry of Energy receives information on registered energy performance certificates.