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NB

**ENERGY INDUSTRY STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

NB/T 31010-2019

Replacing NB/T 31010-2011

Quota for cost estimation of onshore wind power projects

陆上风电场工程概算定额

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Foreword

This document was issued on 4 June 2019 by the National Energy Administration of the PRC and takes effect on 1 October 2019.

It is a NB/T standard: recommended rather than compulsory, but it is the text a Chinese reviewer applies when assessing a submission.

It is classified under ICS 27.180, Chinese classification P 02.

It replaces NB/T 31010-2011, which is superseded.

This standard has been drafted in accordance with the rules given in GB/T 1.1-2009, Directives for standardization - Part 1: Structure and drafting of standards.

This standard replaces NB/T 31010-2011, Quota for cost estimation of onshore wind power projects. In addition to editorial modifications, the main technical changes of this standard with respect to NB/T 31010-2011 are as follows.

The field of application of the standard has been revised to read: the standard applies to the compilation of design cost estimates for newly built centralized onshore wind farm projects; for other onshore wind farm projects, the compilation of design cost estimates may be carried out with reference to this standard.

The labour grades of the quota have been revised to read senior skilled worker, skilled worker and general worker; the unit of measurement of labour in the quota has been revised to the work-day and the unit of measurement of machinery has been revised to the machine-shift.

The number of quota sub-items for equipment installation works has been adjusted from 491 to 461, of which 259 quota sub-items have been revised, 153 quota sub-items are new and 183 quota sub-items have been deleted.

Chapter 1 'Installation of wind turbine generator units, towers (frames) and foundation rings'

has been revised into 5.1 'Installation of wind turbine generator units, towers (frames), foundation rings and prestressed anchor bolts', comprising 58 quota sub-items in total. Within it, the installation of wind turbine generator units has been supplemented with three installation methods using a crawler crane, a truck crane and a dedicated wheeled crane, amounting to 25 quota sub-items; the installation of towers (frames) has been supplemented with the same three installation methods using a crawler crane, a truck crane and a dedicated wheeled crane, amounting to 19 quota sub-items; the installation of foundation rings and prestressed anchor bolts has been supplemented with 1 new quota sub-item for the installation of prestressed anchor bolts; 13 quota sub-items have been revised and 26 quota sub-items have been deleted (see 5.1; 1.1, 1.2 and 1.3 of the 2011 edition).

In Chapter 2 'Transformer installation', 'installation of three-phase power transformers' has been supplemented with 1 new quota sub-item and 'installation of dry-type transformers' with 8 new quota sub-items; 'installation of reactors' has been added with 6 quota sub-items; 47 quota sub-items have been revised and 14 quota sub-items have been deleted (see 5.2; 2.1.3, 2.1.4, 2.1.5, 2.1.6, 2.3 and 2.4 of the 2011 edition).

In Chapter 3 'Installation of switchgear equipment', 'installation of circuit breakers' has been supplemented with 2 new quota sub-items, 'installation of disconnecting switches' with 6 new quota sub-items, 'installation of instrument transformers' with 2 new quota sub-items, 'installation of fuses' with 2 new quota sub-items and 'installation of complete high-voltage switchgear cabinets' with 2 new quota sub-items; 'installation of earthing transformers and complete earthing resistance devices' has been added with 1 quota sub-item; 'installation of entrance and exit bushings of gas-insulated combined switchgear (GIS)' has been added with 3 quota sub-items; 'installation of capacitors' has been supplemented with 2 new quota sub-items; 'installation of dynamic reactive power compensation devices' has been added with 5 quota sub-items; 76 quota sub-items have been revised and 15 quota sub-items have been deleted (see 5.3; 3.1 and 3.10 of the 2011 edition).

In Chapter 4 'Busbar and cable installation', 'busbar installation' has been supplemented with 2 new quota sub-items, 'cable laying' with 6 new quota sub-items, 'installation of cable terminations' with 4 new quota sub-items and 'cable fire protection' with 4 new quota sub-items; 41 quota sub-items have been revised and 29 quota sub-items have been deleted (see 5.4; 4.1, 4.4, 4.5, 4.6.5, 4.6.6, 4.6.7, 4.6.8 and 4.6.9 of the 2011 edition).

In Chapter 5 'Earthing installation', 'installation of earthing busbars' has been added with 2 quota sub-items, 'installation of earth electrodes' with 2 quota sub-items and 'resistance-reducing earthing installation' with 2 quota sub-items; 1 quota sub-item has been revised and 2 quota sub-items have been deleted (see 5.5; 5.1 of the 2011 edition).

In Chapter 6 'Installation of control equipment', 'monitoring system' has been added with 4 quota sub-items, 'installation of protection panels, desks and cabinets' has been supplemented with 4 new quota sub-items, 'installation of control panels, desks and

cabinets' with 4 new quota sub-items, 'installation of AC and DC power supplies' with 1 new quota sub-item and 'installation of AC and DC screen cabinets' with 2 new quota sub-items; 'installation of terminal boxes' has been added with 1 quota sub-item; 1 quota sub-item has been revised and 5 quota sub-items have been deleted (see 5.6; 6.2 of the 2011 edition).

In Chapter 7 'Installation of overhead lines', 'erection of concrete poles' has been supplemented with 1 new quota sub-item, 'erection of steel tubular poles' with 1 new quota sub-item, 'aluminium conductor steel-reinforced' with 2 new quota sub-items and 'transport of materials for line erection' with 10 new quota sub-items; 7 quota sub-items have been revised and 10 quota sub-items have been deleted (see 5.7; 7.2 and 7.3 of the 2011 edition).

In Chapter 8 'Installation of communication systems', 'installation of communication equipment' has been supplemented with 2 new quota sub-items; 4 quota sub-items have been revised and 17 quota sub-items have been deleted (see 5.8; 8.2, 8.3, 8.4 and 8.5.3 of the 2011 edition).

In Chapter 9 'Installation of water supply and drainage, heating and ventilation and fire-fighting equipment', 2 new quota sub-items have been added and 61 quota sub-items have been deleted (see 5.9; 9.1, 9.2 and 9.3 of the 2011 edition).

In Chapter 10 'System commissioning', 'subsystem commissioning' has been supplemented with 11 new quota sub-items and 'tests on special electrical items' with 2 new quota sub-items; 56 quota sub-items have been revised and 17 quota sub-items have been deleted (see 5.10; 10.1.2, 10.1.3, 10.1.6, 10.1.7, 10.1.8, 10.1.9, 10.2.1 and 10.2.2 of the 2011 edition).

The number of quota sub-items for civil construction works has been adjusted from 508 to 363, of which 88 quota sub-items are new and 192 quota sub-items have been revised; the remaining 83 quota sub-items have not been adjusted, and 233 quota sub-items of the 2011 edition have been deleted.

In Chapter 1 'Earthworks', 'excavation with excavators' has been supplemented with 12 new quota sub-items; 74 quota sub-items have been revised and 122 quota sub-items have been deleted (see 6.1; 1.1, 1.2, 1.3, 1.4, 1.8.1, 1.9 and 1.10 of the 2011 edition).

In Chapter 2 'Rock works', 'general rock excavation' has been supplemented with 4 new quota sub-items; 'rock transport' has been added with 'bulldozer stockpiling and haulage of rock spoil' and 'loader loading and haulage of rock spoil', amounting to 10 quota sub-items in total; 'rock backfill' has been added with 1 quota sub-item for 'vibratory compaction'; 49 quota sub-items have been revised and 40 quota sub-items have been deleted (see 6.2; 2.1, 2.2, 2.3, 2.4, 2.5, 2.6 and 2.7 of the 2011 edition).

In Chapter 3 'Foundation treatment works', 'foundation replacement fill' has been added with 'lime-soil replacement fill' and 'crushed stone and bitumen-grouted crushed stone