CLAIMS

1. A power headroom reporting method, ~~applied to~~performed by a terminal device and comprising:

performing power headroom reporting of a target PHR type according to a power headroom report (PHR) policy, wherein

the PHR policy is related to the target PHR type ~~at least one of the following: a carrier used for power headroom calculation, or a target PHR type~~, the target PHR type comprises a first PHR type and/or a second PHR type, the first PHR type comprises a type 1 PHR, a type 2 PHR, or a type 3 PHR, and the second PHR type comprises a real PHR or a virtual PHR;

wherein the PHR policy comprises: determining the target PHR type based on an uplink transmission between a first moment and a second moment, wherein the first moment is a moment at which the terminal device triggers power headroom reporting, and the second moment is a moment of power headroom reporting;

wherein the determining the target PHR type based on an uplink transmission between a first moment and a second moment, comprises at least one of the following:

when at least one PUSCH transmission exists between the first moment and the second moment, determining that the target PHR type is the first PHR type, wherein the first PHR type is the type 1 PHR; or,

when at least one PUSCH transmission or SRS transmission exists between the first moment and the second moment, determining that the target PHR type is the second PHR type, wherein the second PHR type is the real PHR.

2. The method according to claim 1, wherein the PHR policy further comprises:

determining a first carrier used for power headroom calculation, wherein

the first carrier belongs to at least two carriers that carry a first uplink transmission of the terminal device, the first carrier is a carrier that has a highest priority in the at least two carriers and that is determined based on a carrier priority relationship, and the first uplink transmission comprises transmission of an uplink physical channel or a reference signal.

3. The method according to claim 2, wherein the carrier priority relationship comprises at least one of the following:

a priority of a target carrier is higher than a priority of a source carrier;

a priority of a primary carrier is higher than a priority of a primary-secondary carrier, and the priority of the primary-secondary carrier is higher than a priority of a secondary carrier;

a priority of a carrier that carries a physical random access channel (PRACH) is higher than a priority of a carrier that does not carry a PRACH;

a priority of a carrier that carries a physical uplink control channel (PUCCH) is higher than a priority of a carrier that does not carry a PUCCH;

a priority of a carrier that carries an aperiodic sounding reference signal (SRS) is higher than a priority of a carrier that carries a physical uplink shared channel (PUSCH), and the priority of the carrier that carries the PUSCH is higher than a priority of a carrier that carries a periodic or semi-persistent SRS; and

a priority of a carrier scrambled by a physical uplink shared channel (PUSCH) by using a first-type radio network temporary identifier (RNTI) is higher than a carrier scrambled by the PUSCH by using a second-type RNTI, wherein the first-type RNTI is a modulation and coding scheme–cell radio network temporary identifier (MCS-C-RNTI), and the second-type RNTI is an RNTI other than the MCS-C-RNTI.

~~4. The method according to claim 1, wherein the PHR policy comprises:~~

~~determining the target PHR type based on an uplink transmission between a first moment and a second moment, wherein~~

~~the first moment is a moment at which the terminal device triggers power headroom reporting, and the second moment is a moment before power headroom reporting and after the first moment, or a moment of power headroom reporting.~~

~~5~~4. The method according to claim ~~4~~1, wherein the PHR policy further comprises:

determining the target PHR type based on a second uplink transmission, wherein

the second uplink transmission is the latest uplink transmission from the second moment in the uplink transmission between the first moment and the second moment.

~~6. The method according to claim 4, wherein~~

~~the second moment is a receiving moment of first new downlink control information (DCI) after the first moment; or~~

~~the second moment is a Media Access Control (MAC) protocol data unit (PDU) packetizing moment after the receiving moment of the first new downlink control information DCI.~~

~~5~~7. The method according to claim ~~4~~1, wherein the target PHR type comprises the first PHR type; and

the PHR policy further comprises any one of the following:

~~when at least one PUSCH transmission exists between the first moment and the second moment, determining that the first PHR type is the type 1 PHR;~~

when at least one PUCCH transmission exists between the first moment and the second moment, determining that the first PHR type is the type 2 PHR;

when at least one SRS transmission exists between the first moment and the second moment, determining that the first PHR type is the type 3 PHR;

when only PUCCH transmission exists in the uplink transmission between the first moment and the second moment, determining that the first PHR type is the type 1 PHR or the type 3 PHR; ~~and~~

when the latest uplink transmission from the second moment is a PUCCH transmission in the uplink transmission between the first moment and the second moment, determining that the first PHR type is the type 1 PHR or the type 3 PHR; and

when the latest uplink transmission from the second moment is a PUCCH transmission in the uplink transmission between the first moment and the second moment, determining that the first PHR type is the type 2 PHR.

~~8~~6. The method according to claim ~~7~~5, wherein the PHR policy further comprises at least one of the following:

when the latest uplink transmission from the second moment is a PUSCH transmission in the uplink transmission between the first moment and the second moment, determining that the first PHR type is the type 1 PHR;

~~when the latest uplink transmission from the second moment is a PUCCH transmission in the uplink transmission between the first moment and the second moment, determining that the first PHR type is the type 2 PHR; and~~

when the latest uplink transmission from the second moment is an SRS transmission in the uplink transmission between the first moment and the second moment, determining that the first PHR type is the type 3 PHR.

~~9~~7. The method according to claim ~~4~~1, wherein the target PHR type comprises the second PHR type; and

the PHR policy further comprises any one of the following:

when none of ~~at least one~~ PUSCH or PUCCH or SRS transmission exists in a first time interval, ~~determining that the second PHR type is the real PHR; otherwise,~~ determining that the second PHR type is the virtual PHR;

when only PUCCH transmission exists in the first time interval, determining that the second PHR type is the virtual PHR; and

when the latest uplink transmission from the second moment is a PUCCH transmission in the uplink transmission between the first moment and the second moment, determining that the second PHR type is the virtual PHR, wherein

the first time interval is [T1, T2], T1 is the first moment, and T2 is the second moment.

~~10~~8. The method according to claim ~~9~~7, wherein the PHR policy further comprises:

when the latest uplink transmission from the second moment is a PUSCH or PUCCH or SRS transmission in an uplink transmission in the first time interval, determining that the second PHR type is the real PHR; otherwise, determining that the second PHR type is the virtual PHR.

~~11~~9. A terminal device, comprising:

a reporting module, configured to perform power headroom reporting of a target PHR type according to a power headroom report PHR policy, wherein

the PHR policy is related to the target PHR type~~at least one of the following: a carrier used for power headroom calculation, or a target PHR type~~, the target PHR type comprises a first PHR type and/or a second PHR type, the first PHR type comprises a type 1 PHR, a type 2 PHR, or a type 3 PHR, and the second PHR type comprises a real PHR or a virtual PHR;

wherein the PHR policy comprises: determining the target PHR type based on an uplink transmission between a first moment and a second moment, wherein the first moment is a moment at which the terminal device triggers power headroom reporting, and the second moment is a moment of power headroom reporting;

wherein the determining the target PHR type based on an uplink transmission between a first moment and a second moment, comprises at least one of the following:

when at least one PUSCH transmission exists between the first moment and the second moment, determining that the target PHR type is the first PHR type, wherein the first PHR type is the type 1 PHR; or,

when at least one PUSCH transmission or SRS transmission exists between the first moment and the second moment, determining that the target PHR type is the second PHR type, wherein the second PHR type is the real PHR.

~~12~~10. The terminal device according to claim ~~11~~9, wherein the PHR policy further comprises:

determining a first carrier used for power headroom calculation, wherein

the first carrier belongs to at least two carriers that carry a first uplink transmission of the terminal device, the first carrier is a carrier that has a highest priority in the at least two carriers and that is determined based on a carrier priority relationship, and the first uplink transmission comprises transmission of an uplink physical channel or a reference signal.

~~13~~11. The terminal device according to claim ~~12~~10, wherein the carrier priority relationship comprises at least one of the following:

a priority of a target carrier is higher than a priority of a source carrier;

a priority of a primary carrier is higher than a priority of a primary-secondary carrier, and the priority of the primary-secondary carrier is higher than a priority of a secondary carrier;

a priority of a carrier that carries a physical random access channel (PRACH) is higher than a priority of a carrier that does not carry a PRACH;

a priority of a carrier that carries a physical uplink control channel (PUCCH) is higher than a priority of a carrier that does not carry a PUCCH;

a priority of a carrier that carries an aperiodic sounding reference signal (SRS) is higher than a priority of a carrier that carries a physical uplink shared channel (PUSCH), and the priority of the carrier that carries the PUSCH is higher than a priority of a carrier that carries a periodic or semi-persistent SRS; and

a priority of a carrier scrambled by a physical uplink shared channel (PUSCH) by using a first-type radio network temporary identifier (RNTI) is higher than a carrier scrambled by the PUSCH by using a second-type RNTI, wherein the first-type RNTI is a modulation and coding scheme–cell radio network temporary identifier (MCS-C-RNTI), and the second-type RNTI is an RNTI other than the MCS-C-RNTI.

~~14. The terminal device according to claim 11, wherein the PHR policy comprises:~~

~~determining the target PHR type based on an uplink transmission between a first moment and a second moment, wherein~~

~~the first moment is a moment at which the terminal device triggers power headroom reporting, and the second moment is a moment before power headroom reporting and after the first moment, or a moment of power headroom reporting.~~

~~15~~12. The terminal device according to claim ~~14~~9, wherein the PHR policy further comprises:

determining the target PHR type based on a second uplink transmission, wherein

the second uplink transmission is the latest uplink transmission from the second moment in the uplink transmission between the first moment and the second moment.

~~16. The terminal device according to claim 14, wherein~~

~~the second moment is a receiving moment of first new downlink control information (DCI) after the first moment; or~~

~~the second moment is a Media Access Control (MAC) protocol data unit (PDU) packetizing moment after the receiving moment of the first new downlink control information DCI.~~

~~17~~13. The terminal device according to claim ~~14~~9, wherein the target PHR type comprises the first PHR type; and

the PHR policy further comprises any one of the following:

~~when at least one PUSCH transmission exists between the first moment and the second moment, determining that the first PHR type is the type 1 PHR;~~

when at least one PUCCH transmission exists between the first moment and the second moment, determining that the first PHR type is the type 2 PHR;

when at least one SRS transmission exists between the first moment and the second moment, determining that the first PHR type is the type 3 PHR;

when only PUCCH transmission exists in the uplink transmission between the first moment and the second moment, determining that the first PHR type is the type 1 PHR or the type 3 PHR; ~~and~~

when the latest uplink transmission from the second moment is a PUCCH transmission in the uplink transmission between the first moment and the second moment, determining that the first PHR type is the type 1 PHR or the type 3 PHR; and

when the latest uplink transmission from the second moment is a PUCCH transmission in the uplink transmission between the first moment and the second moment, determining that the first PHR type is the type 2 PHR.

~~18~~14. The terminal device according to claim ~~17~~13, wherein the PHR policy further comprises at least one of the following:

when the latest uplink transmission from the second moment is a PUSCH transmission in the uplink transmission between the first moment and the second moment, determining that the first PHR type is the type 1 PHR;

~~when the latest uplink transmission from the second moment is a PUCCH transmission in the uplink transmission between the first moment and the second moment, determining that the first PHR type is the type 2 PHR; and~~

uplink transmission between the first moment and the second moment, determining that the first PHR type is the type 3 PHR.

when the latest uplink transmission from the second moment is an SRS transmission in the uplink transmission between the first moment and the second moment, determining that the first PHR type is the type 3 PHR.

~~19~~15. The terminal device according to claim ~~14~~9, wherein the target PHR type comprises the second PHR type; and

the PHR policy further comprises any one of the following:

when none of ~~at least one~~ PUSCH or PUCCH or SRS transmission exists in a first time interval, ~~determining that the second PHR type is the real PHR; otherwise,~~ determining that the second PHR type is the virtual PHR;

when only PUCCH transmission exists in the first time interval, determining that the second PHR type is the virtual PHR; and

when the latest uplink transmission from the second moment is a PUCCH transmission in the uplink transmission between the first moment and the second moment, determining that the second PHR type is the virtual PHR, wherein

the first time interval is [T1, T2], T1 is the first moment, and T2 is the second moment.

~~20~~16. The terminal device according to claim ~~19~~15, wherein the PHR policy further comprises:

when the latest uplink transmission from the second moment is a PUSCH or PUCCH or SRS transmission in an uplink transmission in the first time interval, determining that the second PHR type is the real PHR; otherwise, determining that the second PHR type is the virtual PHR.