CLAIMS

What is claimed is:

1. A method for reporting power headroom (PH) for a sounding reference signal (SRS), applied to a terminal device, the method comprising:

calculating at least one expected SRS transmit power on at least one SRS resource comprised in a target SRS resource set, wherein the target SRS resource set is an SRS resource set on a target carrier or a target bandwidth part (BWP);

obtaining PH of the target SRS resource set through calculation according to the at least one expected SRS transmit power on the at least one SRS resource; and

reporting the PH of the target SRS resource set obtained through calculation.

2. The method according to claim 1, wherein the calculating at least one expected SRS transmit power on at least one SRS resource comprised in a target SRS resource set comprises:

if the terminal device transmits an SRS on an SRS resource at a moment of calculating the PH, calculating an expected SRS transmit power on the SRS resource based on a transmission parameter of the transmitted SRS and a power control parameter configured for the SRS resource or the target SRS resource set.

3. The method according to claim 1, wherein the calculating at least one expected SRS transmit power on at least one SRS resource comprised in a target SRS resource set comprises:

if the terminal device does not transmit an SRS on an SRS resource at a moment of calculating the PH, calculating an expected SRS transmit power on the SRS resource based on a power control parameter configured for the SRS resource or the target SRS resource set.

4. The method according to claim 1, wherein the at least one SRS resource is one of the following:

at least one SRS resource occupying a same orthogonal frequency division

multiplexing (OFDM) symbol in the target SRS resource set;

at least one SRS resource occupying different OFDM symbols in the target SRS resource set;

at least one SRS resource occupying different bandwidths in the target SRS resource set;

at least one SRS resource using different antenna array groups to transmit an SRS in the target SRS resource set; and

at least one SRS resource using a same antenna array group to transmit an SRS in the target SRS resource set.

5. The method according to claim 1, wherein:

when the target SRS resource set is used for uplink non-codebook transmission, the at least one SRS resource is all SRS resources in the target SRS resource set.

6. The method according to claim 1, wherein:

when the target SRS resource set is used for uplink codebook transmission, beam management, or antenna switching, the at least one SRS resource is any SRS resource in the target SRS resource set.

7. The method according to claim 1, wherein:

when the terminal device transmits an SRS on the target carrier or the target BWP at a moment of calculating the PH, or the target carrier or the target BWP is a currently activated carrier or BWP, the target SRS resource set is an SRS resource set currently used for SRS transmission on the target carrier or the target BWP, or the target SRS resource set is an SRS resource set associated with current physical uplink shared channel (PUSCH) transmission.

8. The method according to claim 1, wherein:

when the terminal device does not transmit an SRS on the target carrier or the target BWP at a moment of calculating the PH, or the target carrier or the target BWP is not an activated carrier or BWP, the target SRS resource set is an SRS resource set with a lowest set index on the target carrier or the target BWP, or the target SRS resource set is an SRS resource set with a lowest set index on a recently activated BWP on the target carrier.

9. The method according to claim 1, wherein the obtaining PH of the target SRS resource set through calculation according to the at least one expected SRS transmit power on the at least one SRS resource comprises:

using a difference between a maximum transmit power and a sum of the at least one expected SRS transmit power on the at least one SRS resource as the PH of the target SRS resource set.

10. The method according to claim 9, wherein:

the at least one SRS resource occupies a same orthogonal frequency division multiplexing (OFDM) symbol; or the at least one SRS resource uses a same antenna array group to transmit an SRS.

11. A terminal device, comprising:

a processing unit, configured to: calculate at least one expected sounding reference signal (SRS) transmit power on at least one SRS resource comprised in a target SRS resource set, wherein the target SRS resource set is an SRS resource set on a target carrier or a target bandwidth part (BWP); and obtain power headroom (PH) of the target SRS resource set through calculation according to the at least one expected SRS transmit power on the at least one SRS resource; and

a communications unit, configured to report the PH of the target SRS resource set obtained through calculation.

12. The terminal device according to claim 11, wherein if the terminal device transmits an SRS on an SRS resource at a moment of calculating the PH, the processing unit calculates an expected SRS transmit power on the SRS resource based on a transmission parameter of the transmitted SRS and a power control parameter configured for the SRS resource or the target SRS resource set.

13. The terminal device according to claim 11, wherein if the terminal device does not transmit an SRS on an SRS resource at a moment of calculating the PH, the processing unit calculates an expected SRS transmit power on the SRS resource based on a power control parameter configured for the SRS resource or the target SRS resource set.

14. The terminal device according to claim 11, wherein the at least one SRS resource is one of the following:

at least one SRS resource occupying a same orthogonal frequency division multiplexing (OFDM) symbol in the target SRS resource set;

at least one SRS resource occupying different OFDM symbols in the target SRS resource set;

at least one SRS resource occupying different bandwidths in the target SRS resource set;

at least one SRS resource using different antenna array groups to transmit an SRS in the target SRS resource set; and

at least one SRS resource using a same antenna array group to transmit an SRS in the target SRS resource set.

15. The terminal device according to claim 11, wherein when the target SRS resource set is used for uplink non-codebook transmission, the at least one SRS resource is all SRS resources in the target SRS resource set.

16. The terminal device according to claim 11, wherein when the target SRS resource set is used for uplink codebook transmission, beam management, or antenna switching, the at least one SRS resource is any SRS resource in the target SRS resource set.

17. The terminal device according to claim 11, wherein when the terminal device transmits an SRS on the target carrier or the target BWP at a moment of calculating the PH, or the target carrier or the target BWP is a currently activated carrier or BWP, the target SRS resource set is an SRS resource set currently used for SRS transmission on the target carrier or the target BWP, or the target SRS resource set is an SRS resource set associated with current physical uplink shared channel (PUSCH) transmission.

18. The terminal device according to claim 11, wherein when the terminal device does not transmit an SRS on the target carrier or the target BWP at a moment of calculating the PH, or the target carrier or the target BWP is not an activated carrier or BWP, the target SRS resource set is an SRS resource set with a lowest set index on the target carrier or the target BWP, or the target SRS resource set is an SRS resource set with a lowest set index on a recently activated BWP on the target carrier.

19. The terminal device according to claim 11, wherein the processing unit uses a difference between a maximum transmit power and a sum of the at least one expected SRS transmit power on the at least one SRS resource as the PH of the target SRS resource set.

20. The terminal device according to claim 19, wherein:

the at least one SRS resource occupies a same orthogonal frequency division multiplexing (OFDM) symbol; or the at least one SRS resource uses a same antenna array group to transmit an SRS.