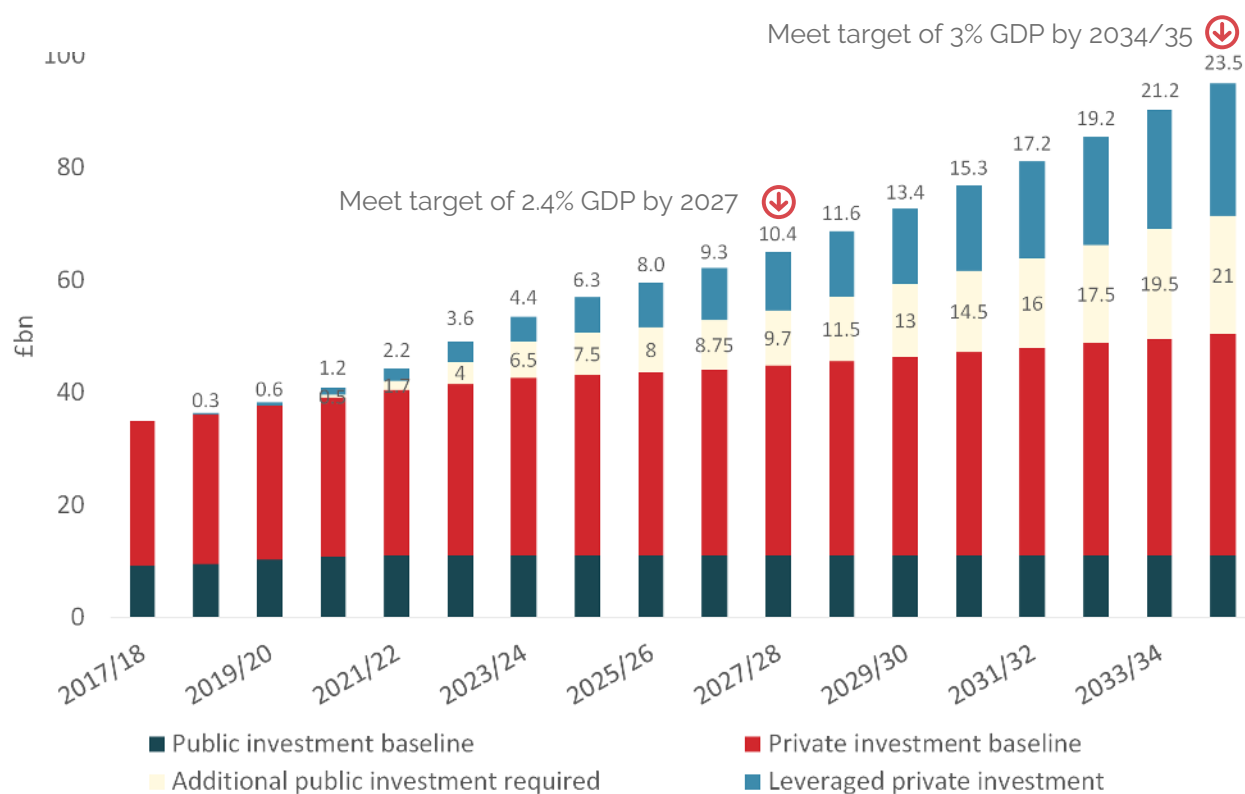


## MODELLING R&D INVESTMENT FOR REACHING 3% OF GDP

CaSE has developed a model for public and private R&D investment to reach an intensity of 2.4% of GDP by 2027 and 3% in the long term (2034/35). The assumptions used in the model are set out below. Broadly speaking the model shows public investment in R&D must double by 2027 to reach the target. Total R&D investment will need to be £65bn in 2027/28 to reach the 2.4% target, from the current level of £35bn (2017).



### UK R&D INVESTMENT TARGET

|                        | 2017         | 2027                | 2034                 |
|------------------------|--------------|---------------------|----------------------|
| Public R&D investment  | £9bn         | £21bn +£12bn        | £32bn +£23bn         |
| Private R&D investment | £26bn        | £44bn +£18bn        | £63bn +£37bn         |
| <b>Total</b>           | <b>£35bn</b> | <b>£65bn +£30bn</b> | <b>£95 bn +£60bn</b> |
|                        | 1.7% GDP     | 2.4% GDP            | 3% GDP               |

#### Model assumptions:

- The 1.36 leverage ratio [4] was applied over 10 years to calculate the growth in public investment required to reach the necessary overall uplift in investment, assuming GDP grows according to OBR forecasts.
- The model begins at 2017/18, using the latest year of available data on the Gross Expenditure on R&D (GERD) in the UK [5], split into public and private spending using GERD categories. The £2.3bn extra announced in Autumn Budget 2017 becomes part of the new baseline level.
- The baseline for public expenditure remains flat in cash terms and the private expenditure baseline increases in line with GDP growth, as per trends in the past decade, using OBR forecasts for GDP growth in the short [6] and medium term [7].
- To meet the 2.4% target, the next Spending Review would need to commit an additional £20.2bn over the next five years, around 3 x the £7bn additional funding committed for 2016-21.