8 A wire that obeys Hooke's law is of length x_1 when it is in equilibrium under a tension T_1; its length becomes x_2 when the tension is increased to T_2.

What is the extra energy stored in the wire as a result of this process?

A $\frac{1}{2}(T_2 + T_1)(x_2 - x_1)$

B $\frac{1}{2}(T_2 - T_1)(x_2 - x_1)$

C $\frac{1}{2}(T_2 + T_1)(x_2 + x_1)$

D $\frac{1}{2}(T_2 - T_1)(x_2 + x_1)$