Problem Statement: Circle C_1 has a radius of 1 and is centered at the origin. Circle C_2 is tangent to circle C_1 at the point $(-\frac{\sqrt{2}}{2}, -\frac{\sqrt{2}}{2})$, entirely contains circle C_1, and has twice the area of C_1. We need to write the equation of C_2 in standard form.

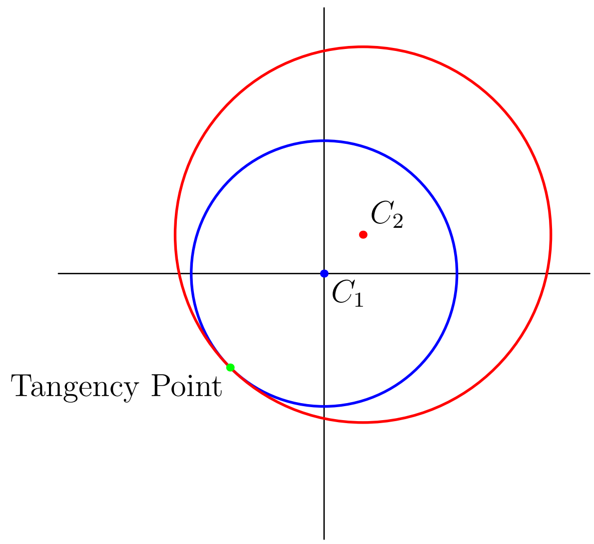

Figure 1: Two tangent circles

Solution:

1. **Determine the Radius of C_2:**
   - The area of C_2 is twice that of C_1. Since the area of a circle is πr^2, and the radius of C_1 (r_1) is 1, the radius of C_2 (r_2) can be found using $\pi \times 1^2 \times 2 = \pi r_2^2$.
   - Solving this gives $r_2 = \sqrt{2}$.
2. **Find the Center of C_2:**
   - Since C_2 is tangent to C_1 at $(-\frac{\sqrt{2}}{2}, -\frac{\sqrt{2}}{2})$ and contains C_1, its center must be along the line extending from the origin to the point of tangency, but in the opposite direction.
   - The center of C_2 is $\sqrt{2}$ units away from the origin in this direction. Given the symmetry and the tangency point, the center is at $(1 - \frac{\sqrt{2}}{2}, 1 - \frac{\sqrt{2}}{2})$.
3. **Write the Equation of C_2:**
   - The standard form of a circle's equation is $(x - h)^2 + (y - k)^2 = r^2$, where (h, k) is the center and r is the radius.
   - Substituting $h = 1 - \frac{\sqrt{2}}{2}$, $k = 1 - \frac{\sqrt{2}}{2}$, and $r = \sqrt{2}$ gives the equation of C_2 as $(x - 1 + \frac{\sqrt{2}}{2})^2 + (y - 1 + \frac{\sqrt{2}}{2})^2 = 2$.

Therefore, the equation of circle C_2 in standard form is:

$(x - 1 + \frac{\sqrt{2}}{2})^2 + (y - 1 + \frac{\sqrt{2}}{2})^2 = 2$

This represents the circle with twice the area of C_1, tangent to C_1 at $(-\frac{\sqrt{2}}{2}, -\frac{\sqrt{2}}{2})$, and enclosing C_1 completely.