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The classical Segal–Bargmann transform is a unitary isomorphism between the L^2 space of the Gaussian measure on \mathbb{R}^d and the space of holomorphic functions on \mathbb{C}^d that are square-integrable with respect to the complex Gaussian measure. An analogous construction, due to Biane, is available in the setting of non-commutative L^2 spaces involving free semicircular and circular systems of Voiculescu, and further generalizes to the q -deformed setting of Bożejko and Speicher, as shown by Kemp. The Segal–Bargmann transform was recently extended by the present authors to the setting of non-tracial generalization of the q -Gaussian spaces in a manner that both complements and contrasts with some related constructions in mathematical physics. We will review the necessary background and discuss new results in this direction. (Received September 15, 2014)