1077-37-2029   **Eugen Andrei Ghenciu*** (`eghenciu@ecok.edu`), 505 Stadium Dr. #B, Ada, OK 74820, and **Mario Roy**. *Gibbs states for non-irreducible countable Markov shifts.* Preliminary report.

We study Markov shifts over countable (finite or countably infinite) alphabets, i.e. shifts generated by incidence matrices. In particular, we derive necessary and sufficient conditions for the existence of a Gibbs state for a certain class of infinite Markov shifts. We further establish a characterization of the existence, uniqueness and ergodicity of invariant Gibbs states for this class of shifts. Our results generalize the well-known results for finitely irreducible Markov shifts. (Received September 21, 2011)