WHAT IS CLAIMED IS:

1. A boundary-layer turbine configured to receive fluid via an inlet end and discharge the fluid via an outlet end, comprising:

a plurality of ducts concentrically arranged around a longitudinal axis of the boundary-layer turbine between the inlet end and the outlet end to convey the fluid from the inlet end towards the outlet end, the plurality of ducts at least partially defined by corresponding duct walls configured to rotate about the longitudinal axis;

one or more flow inlets disposed at the inlet end and configured to receive the fluid into the plurality of ducts at least partially azimuthally around the longitudinal axis towards the outlet end in accordance with rotation of the duct walls of the plurality of ducts, the fluid being frictionally engaged with the duct walls to transfer mechanical energy to, or from, the fluid flowing in the plurality of ducts, the one or more flow inlets being configured to draw the fluid into the plurality of ducts to impart rotation to the duct walls to generate power; and

a plurality of blades rotatably disposed around the longitudinal axis at a downstream end of a duct of the plurality of ducts, the plurality of blades adapted to receive the fluid oriented at least partially azimuthally around the longitudinal axis and to redirect the fluid generally parallel to the longitudinal axis, the fluid thereby imparting rotation to the plurality of blades about the longitudinal axis to generate power.

2. The boundary-layer turbine of claim 1, further comprising an axial turbine stage downstream of the plurality of blades to receive the fluid oriented generally parallel to the longitudinal axis.

3. The boundary-layer turbine of claim 2, wherein the axial turbine stage includes a vaned stator axially aligned along the longitudinal axis and a bladed rotor axially aligned with the vaned stator, the bladed rotor disposed downstream of the vaned stator.

4. The boundary-layer turbine of claim 1, wherein the plurality of blades extend radially relative to the longitudinal axis from a duct wall of the duct and are integrally formed with the duct wall for co-rotation with the duct wall.

5. The boundary-layer turbine of claim 1, wherein the plurality of blades extend radially relative to the longitudinal axis from a first duct wall of the duct to a second duct wall of the duct opposed the first duct wall.

6. The boundary-layer turbine of claim 1, further comprising: a shaft drivably coupled to the plurality of ducts, the shaft being coaxial with the plurality of ducts and circumferentially surrounded by the plurality of ducts.

7. The boundary-layer turbine of claim 6, further comprising:

a plurality of tubes nested concentrically around the longitudinal axis, generally spaced apart from each other, and having progressively larger cross-sectional areas lateral to the longitudinal axis,

wherein each of the plurality of ducts is formed between a pair of concentrically adjacent tubes of the plurality of tubes, and the shaft is disposed coaxially inside an inner cavity formed by a radially-innermost tube of the plurality of tubes at least partially defining a radially-innermost duct of the plurality of ducts.

8. The boundary-layer turbine of claim 1, wherein the duct walls are coupled for common rotation.

9. The boundary-layer turbine of claim 1, wherein a flow inlet of the one or more flow inlets is configured to draw the fluid into an upstream end of a duct of

the plurality of ducts generally azimuthally around the longitudinal axis, and a longitudinal length of the duct is adapted to limit an azimuthal deviation of the fluid to at most 10 degrees.

10. The boundary-layer turbine of claim 9, wherein leading edges of the plurality of blades are adapted to the azimuthal deviation of the fluid along the duct to receive the fluid in substantial alignment therewith.

11. The boundary-layer turbine of claim 9, wherein the flow inlet draws the fluid into the upstream end oriented within 10 degrees of an azimuthal direction around the longitudinal axis.

12. The boundary-layer turbine of claim 1, further comprising:

a slot opening into a duct of the plurality of ducts and radially spaced apart from a radially-inner wall of the duct to receive a first portion of the fluid to draw the first portion of the fluid out of the duct while allowing a second portion of the fluid to remain in the duct, the first portion of the fluid being separated from the second portion of the fluid by being drawn centrifugally towards the slot relative to the second portion of the fluid; and

a flow outlet configured to receive the second portion of the fluid from the duct to discharge the second portion of the fluid out of the boundary-layer turbine.

13. The boundary-layer turbine of claim 1, further comprising:

one or more protrusions extending radially in the duct and spirally extending along and around the longitudinal axis in the duct to define walls of a spiral channel in the duct for receiving and drawing the fluid from the one or more flow inlets into and along the duct, an inlet of the spiral channel azimuthally oriented to receive the fluid supplied by the one or more flow inlets.

14. A method of operating a turbomachine, comprising:

receiving fluid at least partially azimuthally around a longitudinal axis in a duct defined between a first duct wall and a second duct wall via an inlet end of the turbomachine;

frictionally engaging the fluid with the first duct wall and the second duct wall;

rotating, in common, the first duct wall and the second duct wall, in accordance with the fluid;

discharging the fluid via an outlet end of the turbomachine;

rotating a plurality of blades around the longitudinal axis in common with the first duct wall and the second duct wall; and

receiving the fluid from the duct on to the plurality of blades at least partially azimuthally to redirect the fluid generally parallel to the longitudinal axis.

15. The method of claim 14, further comprising supporting the first duct wall and the second duct wall at a longitudinal end to cantilever the first duct wall and the second duct wall along the longitudinal axis.

16. The method of claim 14, further comprising issuing jets of the fluid into the duct at least partially azimuthally to rotatably drive the first duct wall and the second duct wall.

17. The method of claim 14, wherein receiving the fluid at least partially azimuthally around the longitudinal axis in the duct includes drawing the fluid through a channel in the duct that is defined by one or more protrusions extending radially from the first duct wall to the second duct wall.

18. The method of claim 14, wherein the first duct wall is a radially-inner wall and the second duct wall is a radially-outer wall, the method further comprising:

drawing the fluid in the duct azimuthally around the longitudinal axis to centrifugally push relatively dense portions of the fluid away from the longitudinal axis; and

discharging the relatively dense portions of the fluid out of the duct via a slot radially spaced apart from the radially-inner wall.

19. The method of claim 14, further comprising constricting the fluid in the duct as the fluid flows from the inlet end towards the outlet end.

20. A system for generating power, comprising:

a heater for transferring heat to condensate to generate fluid that is at least partially vaporized;

a boundary-layer turbine as defined in claim 1; and

a second boundary-layer turbine spaced apart from and coupled to the boundary-layer turbine to receive the fluid from the boundary-layer turbine into a second plurality of ducts at least partially defining the second boundary-layer turbine, the second plurality of ducts at least partially defined by corresponding second duct walls that are configured for drivable rotation about a longitudinal axis of the second boundary-layer turbine by the fluid frictionally dragging the second duct walls at least partially azimuthally around the longitudinal axis of the second boundary-layer turbine, the second duct walls configured to transfer energy from the fluid flowing in the second plurality of ducts to condense the fluid to generate the condensate for the heater.