It appears the best way to implement WCF communication between desktop and Windows service is to have three projects:

1. A desktop app that acts as a WCF client
2. A Windows Service that handles the backend stuff
3. A WCF service library that is hosted inside the windows service

In this architecture, the Windows services manager (services.msc) will start/stop the backend service and the backend service will start/stop the WCF service library. The WCF service library is a DLL so it cannot be run on its own.