

```

function [Id, Iq] = generate_dq_CurrentsFrom_dqVoltages(nPV, Id, Iq, EdgesGen,
yGen, theta, Eq_prime, Ed_prime)
    for i = 1:nPV+1
        Id(i) = 0;
        Iq(i) = 0;
        for k = [i, EdgesGen{i}]
            Id(i) = Id(i) + abs(yGen(i, k)) * sqrt( Eq_prime(k)^2 +
Ed_prime(k)^2 ) .* cos( angle(yGen(i, k)) + atan(Eq_prime(k)/Ed_prime(k)) +
theta(k) - theta(i) );
            Iq(i) = Iq(i) + abs(yGen(i, k)) * sqrt( Eq_prime(k)^2 +
Ed_prime(k)^2 ) .* sin( angle(yGen(i, k)) + atan(Eq_prime(k)/Ed_prime(k)) +
theta(k) - theta(i) );
        end
    end
end

```